Northern Rhodesia

Rhodesia, Northern. Development authority

Ten-year development plan for Northern Rhodesia

Reviews and revisions

REVIEW

OF THE

TEN-YEAR DEVELOPMENT PLAN

OF

NORTHERN RHODESIA

Submitted by the Development Authority and Approved by the Legislative Council, June, 1948

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FOREWORD.

This report was introduced in the Legislative Council by the following Motion :

"That this Council take note of and do approve generally the Northern Rhodesia Ten Year Development Plan as revised and contained in the Report submitted by the Development Authority and the revised Development Estimates and Loan Programme annexed to the Report."

The Motion was debated on June the 8th and 9th and was approved by the Council.

F. CRAWFORD,
Chairman of the Development Authority.

11th June, 1948.

Contents.

	Section No.	*Pages.*
African Education	17	24–26
African Housing	16 & 25	24, 34
Agriculture	8	11, 12
Annual Review of Plan	4	4
Civil Aviation (and see Appendix V)	23	32, 33
Development Finances	5 & 25	4–7 & 33–35
European Education	19	27, 28
Forestry	11	14, 15
Game and Tsetse	12	15, 16
Health	18	26, 27
Introduction	1	3
Local Authorities' Development Schemes	15	23, 24
Objectives	2	3
Police	21	30, 31
Posts and Telegraphs	20	29, 30
Presentation of Revised Proposals	7	8–10
Prisons	22	31, 32
Procedure and Planning	3	3, 4
Public Works	6 & 14	7, 8 & 17–23
Rural Development (and see Appendix IV)	9	12
Tourist Traffic	24	33
Veterinary	10	12–14
Water Development and Irrigation	13	16, 17
Appendix I. Revised Estimates—Head 35, Development and Welfare Schemes		36–39 & 51–71
Appendix II. Revised Loan Programme		40–43
Appendix III. Revised Housing Summary		44
Appendix IV. Rural Development		45–48
Appendix V. Livingstone Airport		49, 50
Appendix VI. Analysis of £17,000,000 Development Plan		72

REVIEW OF THE TEN-YEAR DEVELOPMENT PLAN

SECTION 1.

Introduction.

1. On the 23rd of September, 1947, the Chief Secretary undertook in Legislative Council that the Northern Rhodesia Development Plan should be reviewed and that Government would take steps to appoint a Director of Development who would be Chairman of the Development Authority and be responsible for the executive direction and co-ordination of Development Schemes approved by that Authority. The purpose of the review of the Territory's Development Plan was to ensure that in the Empire economic crisis that had begun Northern Rhodesia would play its part by striving towards self-sufficiency in foodstuffs; by increasing production of those exports of benefit to the Empire; and generally by increasing its national income and economic efficiency. The Plan was to be given for the time being a stronger economic bias. Increased production was to be the keynote.

2. The Director of Development was to review and revise the Development Plan as his first task and present revised estimates to the Legislature as soon as possible in the year 1948. It did not prove possible, however, due to the officer concerned being engaged on other urgent duties in connection with the State purchase of the railways and the 1947/48 food shortage, and in Legislative Council, for the Director of Development to be appointed until the 30th of January, 1948; and it was not until the 20th of March that he was sufficiently released from other duties to enable him to devote his whole-time attention to the review of the Development Plan.

SECTION 2.

Objectives.

3. At the outset it became necessary for the Director to consider what precisely was intended by the Legislature by its request that the Plan should be reviewed and revised, and having determined this, on the scanty information available, to decide how the Legislature's wishes could be carried out.

4. It became clear from subsequent discussions and debates in Legislative Council—if indeed it was not already abundantly clear—that the prime objectives in their order of importance were:

(i) Increased food production.

(ii) More housing, European and African.

(iii) Improved roads.

By way of explanation of the above immediate priorities it should be stated that the Territory is at present a net importer of *all* foodstuffs, African and European: that the recruitment of essential technical, scientific and professional staff required for the development of the Territory, particularly for increased production, has had to be postponed or curtailed for lack of housing (and office) accommodation and that the housing of the majority of the African staff is deplorable: that the main roads of the Territory are in most cases incapable of carrying efficiently and through all weathers the present traffic, let alone the increase expected from development. In any event as regards roads it seemed that they were one of the much needed improvements that could be got on with immediately, thanks to the increasing availability in the Territory of civil engineering contractors equipped with modern mechanical road plant, and that roads represented a lasting and visible physical asset which at the same time was essential to development.

SECTION 3.

Procedure and Planning.

5. Combined with the need to increase food production is the need to increase the manpower potential of the Territory—and the only way to do this in a country where approximately 200,000 out of an adult male working population of 300,000 are already employed or self-employed is to increase the output of work, the productivity, of the individual African. The development of the so-called social services that give better health or better skills, that will enable the manpower of the Territory to be used to the best advantage, is inevitable and entirely complementary to economic development; and no excuse is offered, therefore, for the inclusion in this review, which was originally ordained to be strictly "economic," of the modified development programmes of the Health Department and the two Education Departments.

6. The next step was to plan how these immediate and important objectives could be achieved. It might have been thought that the published Ten Year Development Plan or the records of the Development Authority would have contained a wealth of information on the subject. On the execution of the Plan, however, both were peculiarly silent. The ideas were there, good or less good according to present-day crisis standards, but there was little or no indication of how the millennium was to be achieved.

7. The only method of designing a plan of action, as distinct from a Plan, appeared to be to interview one by one each head of department, where possible in consultation with the Secretary responsible, to find out what should be tackled first, bearing in mind the above objectives. This was explained to the heads of departments concerned by letter dated the 9th February, 1948. The interviews began on the 24th of March and continued with interruptions, until the end of April. During their course the aspirations (and frustrations) of each head of department were ascertained and his development plan reviewed against the present economic background; and the results are recorded below and assimilated in the revised development estimates (Head 35) and Loan Programme now presented.

8. No attempt has been made to alter the major features of the Ten Year Development Plan approved by the Legislature on the 11th of February, 1947, except as regards the size of the Loan Programme. On the other hand numerous alterations in the incidence of certain schemes and works within the four corners of the Plan have been deemed to be necessary and the approved Loan Programme for the years 1945–1948 has had to be drastically revised and related to current capacity and urgency.

SECTION 4.

Annual Review of the Execution of the Plan: Operational and Financial Advantages.

9. As the investigation and review advanced it became clear that the original intention of reviewing the Plan at triennial intervals, having particular regard to its financial implications and the financial circumstances then prevailing, would have to be abandoned; and that the execution of the whole Plan, if it were to be based on realities, would require to be reviewed—for the time being at any rate and until capacity caught up with requirements—annually. Only in this way could the priority of schemes and works be related to current availability of staff and materials (an ever changing situation) and current needs; and, it was considered only by annual presentation of the next year's programme based as closely as possible on realistic expectation of fulfilment, could the Plan be brought to earth and rendered a practical proposition.

10. An annual review would also maintain a useful check on the recurrent expenditure commitments being entered into under the Plan, both in respect of Colonial Development and Welfare Fund grants and from territorial development funds, and would serve to determine the rate at which the development programme can be carried out. Moreover, such an annual review would serve to relate the recurrent commitments not only to the ability of the Territory to meet, year by year, the increases in recurrent expenditure consequential upon the implementation of the Plan but also to the territorial revenue position at the end of the ten-year period when grants under the Colonial Development and Welfare Act might cease and the whole of recurrent Development charges fall to be met from territorial revenue. Indeed, during the course of the review heads of departments urged repeatedly the need for them to have a firm indication of what their authorised recurrent departmental expenditure might be expected to be at the end of the ten-year period, so that they could plan their annual departmental expansion accordingly and so that they would not be under the necessity of suddenly curtailing services or activities, intended to be permanent, at the end of the ten years or on the expiry of the Colonial Development and Welfare Act.

11. For the reasons set out above it is proposed that the execution of the Development Plan should be reviewed annually and that the following year's Development estimates and programme of loan works should continue to be presented to the Legislature annually at the same time as the Territorial estimates are being considered. The present report will cover, *inter alia*, the review and estimates for 1948.

SECTION 5.

Development Finances.

I. Financial Procedure.

12. The need cannot be stressed too strongly of keeping a careful watch on the recurrent expenditure commitments being entered into under the Development Plan and of endeavouring to relate these, year by year, to the territorial revenue

position. As a corollary it follows that the safest and best method of utilising grants under the Colonial Development and Welfare Act is to confine these, as far as possible, to expenditure on capital works or on self-contained schemes of defined duration readily terminable on the expiry of the Act. In this connection it will be of interest to learn that since the drafting of this report began the following has been received from the Secretary of State for the Colonies (No. 157 Saving of 15–4–48):

> "I note that revised proposals for the ten-year Development Plan will be presented to the Legislative Council in June. I should be glad if, when reviewing the present proposals, you would consider whether as far as possible Colonial Development and Welfare schemes could be confined to capital expenditure on the development programme and recurrent expenditure met from local funds. I feel that this would be desirable for two main reasons:
>
> "(i) A considerable proportion of the Colonial Development and Welfare expenditure would then be incurred in the earlier years of the period to which the Act relates, which would ease the pressure of Colonial Development and Welfare commitments against the yearly maximum in the later years.
>
> "(ii) Recurrent expenditure on the projects being undertaken would then be borne from the outset by the Colony's revenue as the development programme progressed, which would avoid any sudden transfer from Colonial Development and Welfare to revenue at the end of the ten-year period and enable the financial implications of the Development programme on the Colony's budgetary position to be appreciated more clearly.
>
> "I appreciate that such an arrangement might entail a revision of the basis on which the Northern Rhodesia ten-year Plan was originally submitted, namely that the cost of programmes should be borne under Heads I, II and III of the plan in the proportion of 5/12ths from the Colonial Development and Welfare Vote and 7/12ths from the Northern Rhodesia funds. Strict adherence to this arrangement has given rise to anomalies in certain of the applications already submitted e.g. the transfer of expenditure formerly borne by local revenues to Colonial Development and Welfare Schemes, and I suggest that the opportunity should be taken to revise it on the lines indicated above."

In the light of the above it is for serious consideration by the Legislature whether the total recurrent expenditure under the Colonial Development and Welfare Schemes already approved, and under Colonial Development and Welfare applications since submitted (as shown in Appendix I) should not, from 1949 onwards, be borne from territorial funds and debited to departmental expenditure; and that in future assistance from the Colonial Development and Welfare Fund should be sought only for capital works or for self-contained schemes which will end before the termination of the present Colonial Development and Welfare Act in 1956. If *all* recurrent expenditure under Development schemes were to be borne from territorial funds, and carried in the annual expenditure of the department concerned, the total annual sum thus to be transferred would at present be £64,487 in respect of Colonial Development and Welfare funds and £70,378 in respect of funds now found for Development schemes from territorial surpluses. It is, however, too late to make any such change in 1948.

13. To lend flexibility to the programme within the year and to avoid undue dependence on annual fluctuations of revenue and the vicissitudes of the Territory's revenue/expenditure position and to cover unforeseeable increases in cost, it is recommended that a substantial initial Unallocated Balance be provided for in 1948 of the order of £250,000. This unallocated balance, if refreshed annually, will make up for the lack of a Development Fund, as found in other territories. Drawings on it would be made only on the recommendation of the Development Authority and with the approval of Standing Finance Committee, or, where necessary, the Legislative Council itself. The previous unallocated balance under Head 35 was £50,000.

14. Indeed, it might be advisable at this stage for the Legislature to reconsider whether a development fund should not be started in this Territory, and the programme of development be rendered as far as practicable free from the uncertainty inevitable under the normal Colonial system of estimating each year for a balanced budget. Previously the objection in Northern Rhodesia to such a proposal has been that it limits or does away with the powers of the Legislature. But is this really so? Annual payments to the Fund from territorial surpluses would have to be voted by the Legislature, and would be based on the Development Authority's estimates submitted annually, or, in a good revenue year, would depend on the amount which the Legislature considered it could salt away for development. The important consideration is that moneys once paid into this fund for development could not be

diverted to non-development purposes. This is sound economics since the time of greatest need for State expenditure on capital works in order to maintain the level of employment, or to check unemployment, is just when, due to depression threatened or actual, the normal tendency would be to curtail all forms of expenditure.

15. The Development Fund for Northern Rhodesia would thus contemplate the payment into it during the ten year period of:

(i) £2½ million from the Colonial Development and Welfare Fund.
(ii) £3 million from Reserve Funds, as already approved by Legislature Council.
(iii) £2½ million from surpluses, paid in by annual instalments during the years up to 1949.
(iv) £5 or £8 million from Loan funds, as and when raised.

£13 or £16 million.

Appropriations to the Fund would be made annually, with the approval of the Legislature in the case of items (ii) to (iv) above.

II. Where the Money is to Come From.

16. Apart from bearing in mind all the time the need to examine, year by year, recurrent expenditure commitments under the Development Plan in relation to the Territory's capacity to bear these increasing charges, some thought must be given as to where the actual cash for both recurrent and capital expenditure is to come from now, or, to use a current phrase, "what we are to use for money." This is particularly so in 1948 when the whole Plan and the loan programme are being reviewed—for it is obvious that if the territory has not got the cash in the till or in sight it will be necessary to curtail or even suspend some stages of the development programme, which will then take longer than ten years to complete.

17. *Short-term position.* An examination has, therefore, been attempted below of the present or short-term financial position. At a later place in this report a rather more prophetic attempt is made to gauge the long-term position covering the period up to the end of the Ten Year Plan.

18. Before examining short-term revenue prospects it is necessary to take courage and add up the sum total of what the Territory would be committed to *this year* (and if possible next) if all the recommendations in the following pages are approved by a benevolent Legislature; and then to see if there is or will be enough money to go ahead.

19. In adding up the "bill" for Development in 1948 and 1949 no account has been taken of items paid for from the Colonial Development and Welfare Fund since the money for these has not to be found by Northern Rhodesia. In its simplest form the expenditure envisaged may be set out as follows in round figures:

1948	£
1. Head 35 "Development and Welfare Schemes" as revised (i.e. items under "Northern Rhodesia Development Account" only, items under Colonial Development and Welfare Act being excluded.)	540,000
2. "Loan" expenditure 1948	1,700,000
Total Northern Rhodesia 1948 Development expenditure (omitting Colonial Development and Welfare Act grants)...	£2,240,000

1949	£
3. Estimate of Expenditure under Head 35 in 1949 (excluding Colonial Development and Welfare), based on 25 per cent. increase on 1948	675,000
4. Loan expenditure commitments in 1949 based on completion of certain works begun in 1948, and new works, as related to the Territory's constructional capacity	1,000,000
Minimum estimate of Northern Rhodesia Development expenditure in 1949 (omitting Colonial Development and Welfare grants)	£1,675,000

Thus the Development "bill" for 1948 and 1949 may be of the order of £3,915,000. This is a high figure, and might well not be achieved due to lack of staff or shortage of materials and equipment. In 1945 the total expenditure on Development under Head 35 and under Loan was £1,517 (all Colonial and Development and Welfare); in 1946 £109,273; and in 1947 (against an estimate under Head 35 of £578,160 and

of £811,606 under the Loan programme) only £634,870 in all was spent. These figures go to show that in the past estimates of expenditure have exceeded realisation or actual performance. No startling improvement in supplies or staff is likely to alter this position very radically in 1948—although a determined attempt is being made to see that the year's programme is carried out.

20. Turning now to the cash or "credit" position and to revenue prospects this year and next, it is necessary to mention at once that of the £2½ million reserve funds for Development to be accumulated from annual surpluses during the period 1945 to 1949 (paragraph 22 of the Development Plan) the net excess of Revenue over Expenditure during the years 1945, 1946 and 1947 was only £1,078,125. A policy of increased subsidies for food and other commodities, a food shortage necessitating expensive imports, and the additional expenditure likely to be incurred in the acceptance of the recommendations of the Salaries Commission have prevented a greater surplus being achieved.

21. Perhaps the simplest way of ascertaining the Territory's present financial position is to take the surplus balance and reserve funds as disclosed by the territorial accounts up to 31st December, 1947 which have now been completed. The resources thus disclosed are :

	£
Surplus Balance at 31/12/47	4,301,416
Reserve Funds at 31/12/47	2,150,000
Total	£6,451,416

If the "Estimated Surplus 1948" of £100,961 (as shown in item 8 on page 5 of the 1948 printed Estimates) is added a total of £6,552,377 is arrived at.

22. Now out of this total the sum of £2,150,000 has to be set aside to the territorial Reserve Fund (item 15, page 5 of the 1948 Estimates), which leaves £4,402,377, presuming a balanced budget in 1949. From the short-term aspect is the expenditure on Development of £2,240,000 in 1948 and an estimated amount of £1,675,000 in 1949 safe against the background? The answer depends largely on revenue prospects in 1949 and 1950.

23. In this regard, due to our major revenue item (income tax from copper) being collected a year in arrear, 1949 revenue is, as it were, "in the bag." It would not be unduly optimistic to say that base metal exports will increase steadily as soon as the present transport bottleneck is progressively cleared by the increasing supply of trucks and locomotives, and the provision of more accommodation for railway running staff. Nor is there any indication of a catastrophic fall in the price of copper.

24. Tobacco exports, both virginian and turkish, should improve, the former with a certain stability if the Growers Association can negotiate a five years contract with United Kingdom buyers, similar to that achieved in Southern Rhodesia; and the latter perhaps in a spectacular degree now that our turkish leaf is establishing a market in the United States and that country comes to rely less and less for its supplies on the production of south-eastern Europe.

25. Timber exports should also improve.

26. Income Tax from all sources during 1949 is, in fact, estimated to be not less than £5½ million.

27. Taken by and large, and recognising in this world of shortages and imponderables that some of the capital works recommended may not be achieved, for lack of materials, in 1948 or 1949, it would appear that so far as the money is concerned the 1948 revised development estimates and the 1948 loan expenditure now proposed may safely be approved.

SECTION 6.

Public Works Extraordinary.

28. Although it is not, perhaps, strictly within the terms of this Review it may not be out of place, in view of the close relationship between development projects and Public Works Extraordinary, to consider an alternative method for dealing with items under Expenditure Head 30—Public Works Extraordinary. The present method of dealing with items under this head suffers from two major defects.

29. In the first place nearly all the new works contained in the annual programme have neither been designed nor pre-planned when the estimates are approved and it is impossible therefore to present accurate estimates of their cost or to say with certainty whether they are within the capacity of the Public Works Department or of existing contractors (with Public Works Department supervision) to

carry out during the year. It is submitted that a preferable method would be th only those items of Extraordinary works which have been pre-planned (i.e. wo which represent a continuation of the previous year's programme, or new works design, site-plans etc. of which have been prepared and approved) and which c with reasonable certainty be expected to be begun and probably completed wit the year, should appear specifically as sub-heads under Head 30 Public Wo Extraordinary. The remaining items, which have been approved in principle a on rough estimates of their cost, for construction when possible, should appear i schedule as an appendix to the estimates. If, on the revenue position obtain that year, there is a surplus of funds available for expenditure under Public Wo Extraordinary over and above that allocated to specific sub-heads, and if ther still a surplus of construction capacity in the Public Works Department, then amount represented by these two factors should be shown as the last sub-head un Head 30 and entitled " Works to be selected from the Schedule of approved Pu Works." From time to time throughout the year the position could be revie and it could be decided which of the works in the schedule should be undertake begun, having regard to their urgency and to the fact of whether the design plans (the priorities for which could be arranged beforehand) had been comple By this means the orderly pre-planning of works by the Public Works Departm would be facilitated. Provision would be made for the automatic carry ove items in the appendix to the following year's estimates, by which time the des or plans of some of them would be ready to allow of construction in that year their inclusion as specified items in Head 30 Public Works Extraordinary. remainder would not have been lost sight of and would again be included in schedule for construction when ready or when funds and capacity were avail The system described above has already operated with success in Nigeria.

30. The second defect in the present system of dealing with Public W Extraordinary is the inclusion under Head 30 Public Works Extraordinary of i to be undertaken by other departments and not by the Public Works Departm It is recommended that, in future, such works should be shown under the de mental heads, where they belong. Their inclusion under Head 30 Public W Extraordinary merely creates difficulties for the Public Works Departmen preparing estimates and in accounting (issue of warrants, arrangements for re etc.) for expenditure over which, as is the case with the works themselves, it h ontrol. The present system of including such departmental works under He Public Works Extraordinary also gives a misleading idea of the Public W Department's capacity and programme.

SECTION 7.

Form in which Revised Development Proposals Presented.

31. Before passing on to consideration in detail of the various sectional under Head 35 of the Estimates — " Development and Welfare Schemes," i.e. H African Education, Agriculture, Forestry, Veterinary etc. under their main ings of I Social Services, II Economic Services, III Rural Development, IV Com cations, V Water Development and VI Economic Development, and of the dual items in the revised Loan Programme, it may facilitate consideration o follows to explain the form in which the revised proposals and estimates a presented.

32. *Head 35. Development and Welfare Schemes.* Each main depart activity has been dealt with separately (not necessarily in the order given printed Estimates) and is introduced with a brief explanation of the depart immediate objectives and difficulties. Where necessary particular referen been made in the text to existing or new items under Head 35, a revised ver which, representing the Territory's Development and Welfare Estimates f after review, is given at the end of this report as Appendix I .

33. *Loan Programme.* The same procedure has been followed as regard items in the Loan Programme affecting the particular department under co tion, and a revised Loan Programme and Estimates for the year 1948 is g Appendix II .

34. In general, as regards Loan expenditure, it is necessary to state wi emphasis that the cost figures of various capital works in the programmes Expenditure submitted to and approved by the Legislative Council on 12th ary, 1947, and 16th December, 1947, have been found to be quite unrealisti many cases are not even good " guesstimates ! " As examples the combine pean and African hospitals at Broken Hill are likely to cost more than t

total amount of £70,000 shown in the original Loan Programme ; a Mental hospital cannot be obtained for the sum of £20,000 provided ; the Livingstone airport, as explained elsewhere, will now cost almost twice the sum of £350,000 originally provided.

35. These marked differences between reality and the sums originally inserted in the Loan Programme appear to have arisen from a variety of causes chief of which were the hurried preparations by Heads of Departments of the original estimates, as a result of which there was not time to prepare even sketch plans of the works in order to obtain a rough estimate of cost from the Public Works Department, and to a lesser extent the heavy increase in building costs since the programme was first drawn up.

36. Columns 1 and 2 of the Appendix show the items and amounts approved by the Legislative Council in December, 1947. It was realised then that many of the amounts were token figures and that increases in the cost of labour, material and equipment would, when firm estimates were made, necessitate either an increase in the total loan provision of £5 million, or the deletion of many projects from the programme.

37. This expectation has now come about. *The original Ten Year Development Plan, envisaging an expenditure of £13 million, cannot be achieved with the funds available due to rising costs of staff and material.* It is necessary to recognise this, and the fact that the Plan will now cost £16 or £17 million ; and to contemplate either increasing the amount proposed to be raised by Loan (and the amount to be accumulated annually from Territorial surpluses) or to reduce the scope of the Plan.

38. In the revised Loan programme now presented, columns 3 to 8, show what will be required if all the original items are retained and a number of new items which are considered to be essential are added. The difference is £3 million. It will be necessary for the Legislative Council to decide in June whether the programme is to be recast entirely in order to keep within the original limit of £5 million, or whether the amount to be borrowed (and the amount to be accumulated annually from territorial surpluses) should be increased in order to retain all desirable items.

39. The revised estimates have been divided into two sections. Column 4 shows the estimated cost, based on the latest information, of all items which have already been planned, or which are considered to be essential. These, subject possibly to some modification of the road programme in section " E," can be regarded as the " inescapables." Column 5 shows the items which are not yet planned, and for which the estimates are subject to modification, such as the transfer of departmental headquarters to Lusaka. These would be the first to go if the programme has to be pruned.

40. *Health*—(*Section " A "*). There is only one item which is under way so far, and that is the new hospital scheme at Broken Hill. The other items in the original plan have been increased, arbitrarily, by 40 per cent., which may, in the event, prove to be too low to meet increased costs. Work is urgently necessary at Fort Rosebery, Balovale and Choma, and on the Entomological Laboratory.

41. *African Education* and *Agriculture* remain substantially unchanged.

42. *The Veterinary Department* allocation disappears as a separate section, as the requirements are included in block votes under the General Building Schedule (Item " J ").

43. *Roads, etc.* (*Section " E "*). An increase of not less than £700,000 is needed if a balanced programme is to be achieved.

Head 7—Bridges and culverts is a new, but necessary, part of the programme.

Head 8—provides for the following sections of tarred road :
Broken Hill—Lusaka ;
Mazabuka area ;
Approach to Livingstone ;
Great East Road approach to Lusaka ;
Groundnut Road.

Head 9—Investigations, etc. This is provided to enable the Director of Public Works to employ private firms to undertake preliminary planning on his behalf and thus reduce the need for extra departmental staff.

Head 10 Inland Water Transport. This is a guess, and it may be considered better to make no specific provision until plans have been drawn up and approved. If so, the unallocated provision should be increased by £50,000, with the advantage that it would give greater flexibility to the programme as a whole.

44. *Aerodromes* (*Section "F"*). The revised figure of £643,000 provides for the essentials only and is based on an exact calculation of to-day's costs of material and labour.

45. *Posts and Telegraphs* (*Section "G"*). These items are self-explanatory and the figures are based on the most recent tenders for the supply of necessary equipment.

46. *Urban African Housing* (*Section "H"*). No change.

47. *Loans to Local Authorities* (*Section "I"*). Loans amounting to £93,000 have already been authorised and Local Authorities have been asked to prepare and submit schemes for large scale works, such as Water Supplies, Sewerage, Roads, for which it is estimated a total of at least £500,000 will be needed. Indeed this figure may be considerably exceeded if comprehensive plans are submitted for water supply, sewerage and drainage schemes for Lusaka, Livingstone, Ndola and Broken Hill. No provision for such large schemes has been included in the revised Loan programme as not even tentative estimates are yet ready and in any case when the time comes the financing of such schemes might well be effected otherwise than by borrowing from Government. Local Authorities should by then have powers to raise loans or might have recourse to the Development Corporations set up by the Banks, or to the Colonial Development Corporation.

48. *General Building Programme* (*Section "J"*). This section has been recast to provide greater flexibility. A block vote for European housing has been substituted for the departmental list shown in the original programme which contains some obvious absurdities and which pegs expenditure without regard to the real requirements. Similarly, the transfer of departments to Lusaka is shown as one item (7). The provision of £500,000 is not a firm estimate although it is based on a scheme submitted by the Government architect a year ago. It is intended to cover the cost of two new Central Office blocks at £100,000 each; the cost of moving Posts and Telegraphs, Police and Stores headquarters to Lusaka; for housing over and above that provided in the £1 million block vote for normal departmental requirements, and for lay-out. It does not provide for a new High Court building or a Legislative Council building. Provision of £27,500 in 1948 is for preliminary work on the Police Depot near Lusaka; offices for the Police and Agricultural Departments and two blocks of fifteen rooms each to afford immediate relief to departments which are at present seriously overcrowded in the Central Office main building.

49. *European Education* (*Section "K"*). This has been left at £400,000 but it is known that the estimated building requirements of this department are in the region of £1 million.

50. *Unallocated Balance*. It will be noted that provision has been made in some sections for unallocated funds to be used *within those sections* as projects are planned and approved. In addition to this, however, provision has been made for a general unallocated balance of £457,000 which is arrived at simply by subtracting the total committed provision from £8 million. This balance will be available for use in any of the various sections according to the urgency and merits of projects which may be submitted in the future. Section K: European education is an obvious case where assistance from the Unallocated balance will be needed soon.

51. *European Housing*. A schedule of each department's housing requirements at the various main centres, compiled during this review, is given at Appendix III. Housing requirements at outstations, or smaller centres, which in most cases will be built departmentally (and in any case not by the Public Works Department) are not shown in the Schedule, but have been recorded by the Director of Development for attention.

52. At present the financial provision for European Housing is scattered about in various places throughout Head 30 Public Works Extraordinary (the sum of £78,000 under item 65 being, for instance, no more than a "subtraction" figure representing the difference between total Public Works Department capacity and the 1948 list of Public Works Extraordinary), in Head 35, usually tucked away in the Appendices and in the original Loan programme. It is proposed that there should be a one-line vote for European housing, in the Loan programme, in much the same way as for African Urban housing in section "H" of the Programme; and that all European housing should be charged to that vote except those houses to be built from Colonial Development and Welfare funds and those especially required in connexion with the transfer of departments to Lusaka.

SECTION 8.

Agriculture.

53. The Agricultural Department is faced with the biggest task in the Territory and Government is pledg d to give the ag icultural industry its wholehearted support. The immediate objective, it is hardly necessary to reiterate, is increased food production. The solution is complex and will inevitably take time.

54. As regards *European agriculture* much depends on labour supplies, supplies of agricultural machinery, improved water supplies, and a system of agricultural credit both long-term to enable farmers to increase their operations, and short-term so that they may increase their resources of machinery while awaiting the sale-proceeds of their crops. Some means are also required to ensure that the right acreag s of the various crops are g own and that price adjustments arising from increased production costs or as inducement do not throw out of balance the territorial production of different crops—as was the case with maize and wheat this year. Discussions are proceeding with the Farmers' Union regarding the establishment of an Agricultural Production and Settlement Board to see if it is possible and would be acceptable to introduce in Northern Rhodesia a farming measure similar to the Kenya Increased Production of Crops Ordinance, itself very akin to farming legislation in the United Kingdom. Whatever new agrarian legislation is adopted the Land Board appears to be the best body to deal with the extension of agricultural credit and the finding of land for new settlement. The Board has been in existence for a little over two years but already has an impressive record. In that time it has dealt with applications for over 329,000 acres of Crown Land and with 114 new settlers who have taken up agricultural holdings. It has granted loans of £164,300 to farmers new and old, and as a result of this and other assistance given by the Board, over 5,000 acres of new land have been brought under production, £13,000 worth of buildings and other permanent improvements constructed, and £54,600 worth of tobacco and £67,500 worth of food crops produced. As supplies of farming implements and building materials improve increasing demands will be made on the facilities offered by the Land Board. It is a tribute both to the Board and to the farming community that so far there has not been a single bad debt. On the contrary, the tendency has been for repayments of loans to be made in advance of the date when they fall due.

55. *Head* 35/56. *Bush Clearing Unit.* The Territory's first requirement is to get more land cleared and under food crops. To facilitate this it is recommended that Government establish, as soon as the machinery can be obtained, a Bush Clearing and Terracing Unit and the nucleus of an Ag icultural Machinery Pool. Provision of £25,000 has been included for this important purpose under Head 35 item 56. Ideally such a Unit and Pool is supposed to operate without profit or loss, the charges to farmers being supposed to meet depreciation and running costs. This, however, is seldom the case and it may be necessary, once the machinery has been obtained, to provide for recurrent expenditure or operating losses. While a small subsidy to assist in the clearance of new acreages for food production might be justified there is no case, it is submitted, for subsidising the clearing of tobacco lands. An alternative to Government operation is for Government to finance the purchase of the machinery and equipment and to arrange for its operation, at a scale of fees to be laid down, by an Agency such as one of the local agricultural machinery firms. The matter is receiving consideration and will be discussed further with the Agricultural Production and Settlement Board when the latter is formed.

56. *Head* 35/53. *Extension Services.* As regards *African agriculture* the urgent need is for more Agricultural Instructors to teach improved methods and soil conservation. An Agricultural Training School will be established this year in the Southern Province, to be followed by similar schools in the Eastern and Northern Provinces in 1949 and 1950. African agriculture is dealt with in greater detail under the section Rural Development. The whole conception for an improved African agriculture will be to get away from the limitations of " one man one hoe."

57. *Government Maize Production Scheme.* A Government Scheme for the mechanised clearing and cultivation of 40,000 acres of maize land in the Mumbwa district has been referred to the authorities in the United Kingdom, who are examining the possibility of this scheme being run in conjunction with the Groundnut Scheme if and when the latter is extended to Northern Rhodesia. An alternative to the Scheme originally prepared would be for Government to clear the land and then lease it to farmers.

58. *Supply of Tractors.* Special representations were made by Government for the immediate supply to the Territory from the United Kingdom of 200 wheeled tractors, and advice has been received recently that these will be available if commercial orders are placed at once with the manufacturers. In the absence of the appointment as yet of a Main Ag nt for Northern Rhodesia for one of the new makes of wheeled tractor it is for consideration whether an initial order for, say, fifty o f these units should not be financed by Government.

59. *Staff.* The Agricultural Department itself is woefully short of staff. Its present vacancies are (Departmental) one Senior Agricultural Officer, three Agricultural Officers, one Agricultural Supervisor; (Development) one Chemist, one Economic Botanist, one Entomologist, six Agricultural Officers, seven Agricultural Supervisors. An attempt is being made to recruit staff in the Union of South Africa and from Australia; and the Director of Development will see what can be done by direct personal approach to the authorities in the United Kingdom.

60. *Loan Programme item C.*1. For the Department to function satisfactorily and to maintain the necessary liaison which the successful prosecution of the food production drive requires, it is considered essential that its headquarters should be transferred from Mazabuka to Lusaka as soon as possible. It is planned to do this in 1948 and the necessary provision has been made in the year's Loan Programme, under item J.7: transfer of departments to Lusaka.

61. *Loan Programme item C.*2. Housing and office accommodation for headquarters staff and for agricultural staff in the Provinces will receive a high priority.

SECTION 9.

Rural Development.

62. The long-term objectives of African Rural Development were set out in paragraphs 147–179 of the Ten Year Development Plan, as were the means of achieving these objectives. These long-term objectives remain unaltered but the programme of Rural Development for 1948 and 1949 has been radically altered so as to increase the tempo of development and achieve as soon as possible the first major territorial objective of increased food production—while at the same time maintaining and increasing soil fertility and checking soil erosion. This is a formidable undertaking as it means nothing less than a revolution in African agriculture. Fuller details of the revised Rural Development Plan are given in Appendix IV.

63. The initial difficulties in speeding up Rural Development are lack of housing and lack of essential Agricultural staff. The housing difficulty is being met by self-help in that, wherever possible, the buildings required for Rural Development will be built by the Department itself. To facilitate this work the Commissioner for Native Development is recruiting his own Foremen Building Instructors. The Agricultural staff position has been referred to above under "Agriculture."

64. *Head* 35/90. *Development Centre—Capital Works.* The Development Centre will be built in the Mongu district of Barotseland. A provisional site has been selected and temporary buildings will be built on it. When further investigation into sites has been made and the most suitable site selected, permanent buildings will be erected. The estimate under this sub-head will permit of (*a*) collection of building materials, (*b*) purchase of motor vehicles and barges, (*c*) building of permanent buildings later in the year when a final decision has been arrived at regarding the permanent site for the Centre. The above arrangements, which are considered by the Development Authority to be the most likely to achieve rapid progress, will entail this sub-head bearing the cost of the temporary buildings now under construction as well as the cost of permanent buildings when erected.

65. *Head* 36/93. *Development Areas—Capital Works.* Provision is made for housing and offices in seven Development Districts: Fort Rosebery, Serenje, Manyinga, Katete (Fort Jameson), Solwezi, Kasama and Monze. Completion of the building programme depends (*a*) on the rate of recruitment of building foremen, (*b*) on the supply of building materials available. The cost of building foremen is included in the estimate for buildings. Monze did not figure in the original programme for 1948 but has been added with the approval of the Development Authority as it will serve the main food producing area of the Territory.

66. *Head* 35/94. *Development Areas—Recurrent.* The "Special Expenditure" under this sub-head is concerned mainly with peasant farming schemes at Mazabuka, Fort Jameson, Petauke, Abercorn, Isoka, Serenje and other centres.

67. *Head* 35/98. *Preliminary Development Works.* This sub-head will cover rural development work in areas not served in 1948 by the Development districts.

68. *Head* 35/100. *Expert Investigations.* A token figure of £1,000 is shown. Expenditure will be authorised on investigations made at the request of the Development Authority.

SECTION 10.

Veterinary.

69. A drive towards territorial self-sufficiency in foodstuffs is nowhere more important than in the livestock and dairy industries. The Territory at present imports nearly half its requirements of meat and nearly all its requirements of bacon, butter and cheese. This position can only be remedied by a marked increase in the Territory's livestock population, particularly its cattle population; and for some years

to come the accent must be on quantity rather than quality. Government has been giving consideration to the problems arising from the increasing slaughter of immature breeding stock and the method of controlling this either by legislation prohibiting the slaughter of such stock, or by means of a " Good Cattle Production Bounty " so as to stimulate the production and maintenance of breeding stock on sound lines without, however, causing a rise in the prices of meat to the public.

70. Both these measures are important and the Territory's best prospect of success lies in building up its existing livestock industry. But no very rapid improvement can be effected without considerable imports of breeding stock from those adjoining African territories who are more happily placed for livestock supplies than Northern Rhodesia. It is equally certain that the " revolution in African agriculture " referred to under the head " Rural Development " cannot be brought about without adequate numbers of livestock in rural areas both for composting and for draught purposes. A great deal of preliminary investigation will be necessary to find out where (if anywhere), in these days of increasing shortage of livestock in southern Africa, the cattle to be imported can be obtained ; and it is for this reason that one of the most important features in the livestock development programme is not set out specifically in the present Development estimates. The Director of Veterinary Services, however, has been instructed, so soon as he can locate supplies, to submit a scheme for the importation and distribution of breeding stock embodying provision for the purchase, collection and distribution of the cattle, the fencing and improvement of stock routes, agency fees, subsidisation (if necessary) and all the other items of expenditure attendant on the extensive importation of breeding stock into a territory such as Northern Rhodesia. This important scheme when approved by the Development Authority will be submitted to the Legislature for approval of the necessary funds.

71. *Head* 35/70. *Additional Staff and Equipment.* The implementation of this scheme, as shown in Appendix D.17 of the printed Estimates for 1948, depends entirely on the availability of staff and housing. Veterinary staff is proving easier to get than Agricultural or Forestry staff, so housing is the real crux. It is for consideration whether such an obviously recurrent item as this should not be transferred *in toto* to the Departmental Head 34 in 1949.

72. *Head* 35/71. *Capital Works for Additional Staff.* The substantially increased provision made is for housing for Veterinary Officers at various centres (referred to in paragraph 71 for the necessary rebuilding of the Compound at the Central Research Station at Mazabuka, and for additional office and laboratory accommodation. A large item is £13,000 for an electricity supply for the Central Reserach Station. This is required to enable important Veterinary research work and the manufacture of vaccines etc. to be undertaken in the laboratory, and to provide a laboratory service for the diagnosis and investigation of disease.

73. *Head* 35/74. *African Veterinary Assistants' School.* This school, begun in 1945, continues to function satisfactorily. Its present curriculum is one year's initial course at Mazabuka, then two to three years' field work, followed by an advanced course at the school. The school could not be expanded at present but its current intake of forty African pupils a year is considered to be adequate.

74. *Pig and Dairy Industries.* Consideration has been given to the development of a pig products industry in Northern Rhodesia. The satisfactory development of pig growing depends, however, on a surplus of whole milk, over and above the Territory's requirements of fresh liquid milk, which would allow of the making of milk products (butter, cheese) and the use of the residual skim milk for pig feeding. Milk production in Northern Rhodesia has increased from 300,000 to 480,000 gallons between the years 1945 and 1948, as against an estimated consumption requirement in those years of 800,000 and 1,000,000 gallons respectively. With the improvements being effected by the Co-operative Creameries of Northern Rhodesia, Limited (with Government financial assistance) in the collection, treatment and transportation of liquid milk, it is anticipated that the fresh milk market will reach saturation point within five years and that thereafter it should be possible for part of the Territory's butter, cheese and bacon requirements to be met locally by the utilisation of the surplus milk as described above. No short-term solution other than rapidly increased dairy herds can be suggested.

75. *Poultry.* The Territory is seasonally and in some places perennially short of eggs. The supply, moreover, of table birds which are a useful substitute for meat is negligible and must be quite the worst in East or Central Africa. To overcome these shortages, for which there appears to be no good reason, the Veterinary Department is experimenting with sex-linked poultry in the hope that breeders will be interested in the production of a good laying strain which will also provide profitable table birds.

76. *Grazing.* There is a strong case for pasture research so as to find the best means of improving grazing on existing farms and to stimulate an increased use of hay as dry season fodder. A pasture Research scheme (together with several other re-

search schemes not referred to in this report and at present under consideration for assistance from the Central Research Allocation of the Colonial Development and Welfare Fund) is being worked out and will be submitted to the Development Authority shortly. In this connexion it is appropriate to mention that if this Territory is to increase its cattle population substantially, as it must, an increased acreage of suitable ranching land should be made available either by the merging of existing unoccupied or undeveloped farm units, or, if it can be arranged, by the alienation for ranching of unoccupied Native Trust Land under the terms of the Native Trust Lands Order in Council.

77. *Staff.* The Veterinary Department at present has the following staff vacancies (Departmental) nil, (Development) three Veterinary Officers, one Dairy and Poultry Officer, one Research Assistant, but as stated above, the chief difficulty is to house this staff rather than recruit it. The housing requirements of this production department have, therefore, been given a high priority.

SECTION 11.

Forestry.

78. In the case of the Forestry Department, which is a new one, it is difficult to distinguish between urgent and much-needed expansion of departmental activity and development. Whichever it is called, the sooner the work is begun the better. The principles behind what requires to be done have been ably set out by the Conservator of Forests in a Statement of Forest Policy for Northern Rhodesia which will shortly be submitted to the Legislature in the form of a Sessional paper. This essential work of the Forest Department which, it must be remembered, controls, safeguards and accounts for the revenue (amounting to some £61,000 in 1947 and estimated to be £80,000 in 1948) derived from one of the Territory's greatest natural assets, cannot be undertaken without additional staff both European and African. The staff position of the Forest Department is the worst in the Territory. This section begins, therefore, with details of the Department's immediate staff requirements.

79. *Staff.* Present vacancies are (Departmental) one Senior Assistant Conservator of Forests, two Assistant Conservators of Forests, one Forester and two European Clerks; (Development) one Assistant Conservator of Forests. The above officers and existing staff require housing at Livingstone, Ndola, Broken Hill and Mongu. The house at Livingstone is particularly important if Government is to ensure that the terms of the recently issued licence granted to Zambesi Saw Mills to cut teak for a further ten years in the Barotse Forests are properly carried out.

80. In considering the Forestry matters which follow it will be of assistance to bear in mind the cardinal points of the Forest Policy referred to above. These are Land Protection, Timber Production and Wood Supplies, Conservation of resources on vacant lands, Forest Revenue (cheap supplies and a maximum return from exports), Education in the value of forests, and the extension of sound forestry practice both as regards land use and conservation.

81. *Head* 35/60. *Forestry School.* The object of this school is, briefly, to train African Forest Rangers and Forest Guards so that they are capable of managing forest reserves *according to plan*. The work of a Forest Ranger requires training in surveying and mapping and it is proposed, therefore, that Rangers should begin their training by an elementary course at the African Survey School. The provision for the Forestry School in 1948 of £1,500 is for rehabilitation of buildings, transport charges, school equipment and the salary of a Forest School Instructor. In 1949 expenditure is likely to be of the order of £12,000 to build a new school and extend its activities.

82. *Head* 35/62. *Forest Service in Rural Areas.* This item should never have become a scheme for assistance from the Colonial Development and Welfare Fund. It is essentially an expansion of departmental activities and it is recommended, therefore, that the Colonial Development and Welfare Scheme should be cancelled, the sum of £4,000 already spent on the purchase of office and camp equipment, vehicles, buildings and labour in connection with the establishment of a Provincial Forest Officer at Mongu being either refunded by special warrant or charged to Northern Rhodesia Development Account until such truly departmental expenditure can be carried in subsequent years in the annual Departmental Estimates. With the cancellation of the original Colonial Development and Welfare Scheme, the estimate for which was £88,000, " savings " will be available and it is proposed that these should be applied to other Development schemes such as the Forestry School, Capital Works for Forest Development and Survey of timber resources. Fresh Colonial Development and Welfare applications will be submitted for these projects to the Colonial Office in due course.

83. *Head* 35/63. *Utilisation of Timber Investigations.* The previous title "Additional Headquarters Research Staff" has been abandoned in favour of one which more accurately describes the work to be undertaken. The sum of £5,000 provided in 1948 covers the payment and passages of a Business Manager for the Department (already approved by the Development Authority), one Utilisation Officer, one Silviculturist, and one Forester; and the purchase of vehicles and stores.

84. *Head* 38/64 *and* 66. The original items 64 "Capital Works for Additional Staff" and 66 "Capital Works for Timber Production" have been combined into a new item *Capital Works for Forest Development.* This item will now cover all major housing and buildings required for the Forestry Development Plan including nursery buildings and water installations. An initial sum of £26,000 has been provided in 1948 but no expenditure will be incurred until an application for assistance from the Colonial Development and Welfare Fund to the extent of the full amount required (£50,000) has been submitted, and approved.

85. *Head* 35/65. This item, previously called somewhat vaguely "Timber Production," has been renamed *Forest Development and Improvement.* The scheme provides for fire-towers and special equipment and labour for land clearing both in the teak forests and for the pine plantation on the Copperbelt. The work represents permanent development and improvements of a capital nature.

86. *Head* 35/67 (*new item*). *Survey of Timber Resources.* The forest assets of the Territory can never be adequately exploited or conserved until they have been surveyed and enumerated. This scheme, which will be the subject of an application for assistance from the Colonial Development and Welfare Fund, comprises a self-contained team of one Assistant Conservator of Forests, one Forest Officer and African staff, with vehicles, mapping materials and survey equipment. There will be no expenditure during 1948.

87. *Head* 35/68 (*new item*). *Visits of Specialist Officers: Training of European Staff.* The objects of this Scheme, for which assistance from the Colonial Development and Welfare Fund will be sought are (*a*) to bring out experts on sawmilling, research, fibre board, wood chemistry and plastics, forest products and forest interpretation of aerial photographs to deal with short-term and specialist problems for which we could never obtain a permanent specialist officer; (*b*) to secure (while they are available) the temporary services of three senior and experienced officers from the India or Burma Forest Services to initiate and organise forest operations at Fort Jameson, Kasama (Bangweulu) and Solwezi and ensure they start on sound lines. The officers would be employed for one or two tours only and would work with Provincial Development Teams; (*c*) to permit exchange visits with Forestry scientific staff in the Congo, South Africa and East Africa and the performance of laboratory work outside the Territory; (*d*) to send certain Foresters who have not yet been through a Forestry School to the British Forestry Commission's School for Foresters for one year. This general scheme is designed to improve the standard of the Department's staff and work and should pay a good dividend.

SECTION 12.

Game and Tsetse Control.

88. The Department of Game and Tsetse Control is not commonly regarded as a "Production" Department but the fact is it has a contribution to make as important as any to the Territory's food supplies. A few quotations from the Director's recent pamphlet "A Short Survey of the Aims and Functions of the Department of Game and Tsetse Control" will illustrate the point. Speaking of fish farming he says: "The figures are impressive: fish farms yielded 300 lbs. to 500 lbs. per acre per annum where wild water in the same area yielded 30 lbs. . . . Pork could yield no more than 300 lbs. and beef scarcely 150 lbs. . . . There was the value of water conservation which needed no emphasis: fish would give it still greater value and a pointed incentive." Of the Territory's natural fisheries it is stated: "Fish occupies a leading place in native industry and on the basis of present prices it can be no exaggeration to say that the Northern Rhodesia [natural] fisheries provide some £250,000 worth of fish a year."

89. The control and eventual elimination of tsetse fly in certain areas will, furthermore, make possible the alienation to farming of land at present uninhabited and uncultivated, and, with the introduction of cattle into previous "fly areas", will help to bring about the desired "revolution in African agriculture" essential concomitants to which are draught oxen and the cow. The Department of Game and Tsetse Control is first and foremost a development and production department.

90. *Head* 35. The development projects of the Department shown under Head 35 have been found, with one exception, to require little or no alteration and have only been amended by the Director in the course of this Review in minor details. The urgent problem is to get the scientific staff required—the Biologists (2), the Entomologist, the Fisheries Officer and the Fish Culturist—into the Territory and on to the job.

91. *Head* 35/82. *Expansion of Departmental Activities.* The exception referred to above is the increase in 1948 expenditure under this item from £29,904 to £41,046. This increase is solely under the sub-head "Special Expenditure" shown in the Appendix and arises to a small degree from the purchase of motor vehicles, rifles, office and camp furniture and technical equipment for new staff, and, to a major extent, from the provision of housing and office accommodation for that staff, which it is hoped will be arriving shortly. It is for serious consideration whether this item should not be borne in the Annual Estimates of the Department from 1949 onwards, by which time most of the heavy special expenditure will have ceased.

92. *Housing.* This and the building of office accommodation present no major difficulty to this Department which relies, refreshingly, on self-help. The buildings required will be put up by the Department itself with the exception of three AK type houses at Chilanga which, it is hoped, will be built under contract at the same time as similar houses are being built for the staff of the Chilanga Cement Works.

SECTION 13.

Water Development and Irrigation.

93. The Development Plan provides under Section V "Water Development" £670,000 for the development and improvement of water supplies for human and livestock consumption, and £300,000 for Irrigation. In 1947 a separate department of Water Development and Irrigation was established to undertake this heavy programme and to achieve the objects set out in paragraphs 191 to 214 of the Development Plan. The present start of the dry season in Northern Rhodesia which will continue with most arid and trying conditions for man, beast and plant for seven to eight months presses home to anyone accustomed to countries with at least two wet seasons a year the need for water development and conservation, and irrigation. The importance of water supplies for food production, both agricultural and livestock, needs no emphasis.

94. *Staff.* The department suffers like most others, only the more so since it is a new one, from lack of technical staff to carry out either its departmental duties or its development projects under Head 35 items 115 and 120. Present vacancies are (Development) one Geophysicist, four Drillers; (Development) two Irrigation Engineers, four Assistant Water Engineers, three Mechanical Plant operators, two Clerks. Housing does not present the same difficulty as in other departments since a large part of the staff is employed in the field. Headquarters staff require four additional houses at Lusaka in 1948. As regards staff, the intention is gradually to absorb the Development staff shown under Head 43 (and in Appendices D. 28 and 29) into the department as its permanent activities increase. As is so often the case with technical or professional staff required for Development projects, the salaries offered do not appear to attract the personel possessing the qualifications required by this department. Endeavours to recruit Irrigation Engineers from India and Palestine have failed.

95. *Head* 35/115. *Water Supplies.* Despite the need for increased rural water supplies from borehole, dam and well in the interests of increased food production, inability to obtain the technical staff, cement, piping and the mechanical equipment required has precluded the expansion of this item beyond what is shown in Appendix D. 28 in 1948. The staff is being recruited wherever it can be found and meanwhile the earth-moving and other specialised equipment has been ordered but delays in delivery are inescapable. In order to increase the borehole drilling capacity of the department three additional drilling rigs, with lorries and trailers to house the crews, are being ordered forthwith. Apart from the long waiting list for boreholes on farms new and urgent demands for boreholes have arisen in connection with the African Housing scheme, the Ground-nut scheme, the Cement factory and Development Areas. Indeed, with the expansion of activity in every Province it is desirable that the Government borehole drilling resources (limited as they are at present to ten rigs) should be used, where they can be spared from essential food production projects, on Development work only and that private boreholes should be done, on the line of rail at any rate, by commercial drilling firms. It is hoped that a large drilling Company from the Union of South Africa will shortly establish itself in Northern Rhodesia. With the arrival of more technical staff and equipment it is hoped to increase the number of dams to be built in 1948.

96. *Head* 35/120. *Irrigation.* The main activity in 1948 under this sub-head and one of great importance to the Territory, is the Kaleya Valley Wheatlands Irrigation Scheme in the Mazabuka district, the object of which is, by a system of dams and weirs, to increase by at least 1,600 acres the irrigable wheatlands in this area.

This important scheme depends entirely for its start on the department obtaining the services of two experienced Irrigation Engineers to undertake the initial hydrographic survey. In the hope of attracting men with suitable qualifications for this project the provision under " Personal Emoluments " in Appendix D.29 has been increased. Once details and estimates of cost have been worked out the scheme will be submitted to the Development Authority for approval.

SECTION 14.

Public Works.

I. HOUSING—EUROPEAN.

97. Mention was made earlier in this report of the urgent need for more European housing; and increased housing was placed as the Territory's second immediate objective. A careful review, in consultation with Provincial Commissioners, has shown that the Government's immediate requirements of European houses for all departments at the centres of Livingstone, Mazabuka, Choma, Monze, Gwembe, Lusaka, Fort Jameson, Kasama, Ndola, Luanshya, Kitwe, Balovale, Chingola, Mufulira, and Broken Hill are 300 married and 82 single quarters, as shown in Appendix III. These figures take no account of housing requirements none the less urgent, at other centres or outstations where, for lack of supervisory staff, the building will have to be done otherwise than by the Public Works Department or large contractors. These requirements amount to 25 married quarters in all, and have been noted for early attention.

98. Allowing for additional requirements that will inevitably arise in the next two or three years it can be safely taken that Government's present and future European housing needs are in the region of 400 to 450 quarters. To meet these needs a one-line item of £1 million for European staff housing including cost of heavy furniture has been inserted in section J of the revised Loan Programme. The incidence of expenditure is calculated to be £200,000 in 1948, £300,000 in each year 1949 and 1950 and £200,000 in 1951. (*Note*: See also paragraph 200. The Legislature agreed that in order to accord equal treatment to African Civil Servants the one line vote should be renamed " Government Staff Housing " and increased to £1½ million.)

99. It became evident that it would be impossible to overtake the immediate backlog of housing in one year but that a three year Housing Plan would have to be adopted. In consultation with the Public Works Department and having regard to the Territory's construction capacity and the supply of materials, it was considered that not more than 154 houses could be built, or begun, in 1948 at main centres. These represented minimum urgent requirements of various departments and will be built at the following places:

(*a*) *By Contract*:

Lusaka	38
Ndola	23
Luanshya	9
Kitwe	20
Chingola	5
Mufulira	5
Livingstone	14
	114

(*b*) *By Public Works Department, Departmentally, or by local contractors*:

At Lusaka, Fort Jameson, Kasama and other centres	40
Total	154

100. Contracts will be let by tender in the very near future, and as soon as the financial provision has been approved by the Legislature, for the 114 houses referred to in (*a*) above. The houses will be of the recently designed " AK " type. This type of house is of permanent construction but is not, as popularly believed, an " austerity " affair. The plan is designed around the kitchen/bathroom unit so that the fireplace, stove and boiler connect to one chimney stack and so that there is the maximum centralisation of plumbing and drainage, resulting in economy in scarce materials, particularly piping. The design has been approved by the Development Authority and accepted by the European Civil Servants' Association. The cost of the houses is estimated to be only some £400 or so more than the present-day cost of the semi-permanent thatched roof cottages built last year. The latter design has been abandoned as experience has shown that the roof involves considerable maintenance charges and the building season for such houses is limited each

year to the time when dry thatching grass is available. The cutting and transport of grass, and thatching, has proved a bottleneck when more than a few houses have to be built.

101. Consideration is being given to the substitution for single quarters at Ndola and Livingstone of Government Guest Houses or Boarding Blocks each providing individual room accommodation and common lounge, dining room, bathroom, lavatory and kitchen facilities for fifteen to twenty single persons. As a trial one of these Guest Houses in permanent materials will shortly be built at Lusaka to relieve in part the acute housing situation there.

102. As regards buildings generally it is necessary to stress the need for these to be of simple and inexpensive type in these days of shortage of materials, limited building capacity and high cost. In any case, in a young country such as Northern Rhodesia, there should be no attempt to sink too large a part of the Territory's funds in buildings, which do not strictly represent productive enterprise, or to emulate the pretentious edifices of older and richer countries. Efficiency with reasonable comfort should be the keynote.

II. Roads.

103. The public outcry for better roads throughout the Territory, particularly better main roads, has been and continues to be great; and is justified. A wet season slightly more prolonged than of recent years has shown up the weakness of the Northern Rhodesia road system, both main road and rural.

104. The Development Plan provided £1,150,000 for "Communications—road, air and water transport." Air signified no more than Northern Rhodesia's original capital contribution of £175,000 to Central African Airways, now increased by a further £45,500 (and likely to be increased still further). Roads qualified, according to a decision of the Development Authority in February, 1947, for £825,000, for which sum the Director of Public Works was asked to prepare a road development programme. No specific amount was provided for inland water transport—and indeed, until recently no action had been taken to investigate the possibility of improving the Territory's waterways. The subject is now receiving expert examination and a token amount of £50,000 has been provided for this purpose in the revised Loan programme.

105. In August, 1947, the Development Authority considered a ten year Road Plan submitted by the Director of Public Works. This plan, which was flexible, was accepted subject to certain modifications and as approved provided for the construction of 215 miles of Class I, 230 miles of Class II, 1,563 miles of Class III and 1,064 miles of Class IV roads, the latter being a new additon considered by the Authority to be necessary. The various Classes are described below. The Road Plan was framed to fit, as far as possible, within the financial limit prescribed of £825,000. Since this plan was approved, however, there has been an increasing demand in the Territory for better main or Class I roads. The revised Road Plan now presented endeavours to meet this demand, while at the same time ensuring that there is balanced road development and that district and country roads, ranging from Class II to Class IV, are not neglected for the sake of a few tarmac speedways between the principal towns. Let there be no misunderstanding about the cost. The bill is a heavy one. It is for the Legislature to say if the money should be provided; and, if so, to face up to the consequential effects upon the size of the Loan which the Territory will eventually have to raise.

106. The four classes of roads adopted by the Development Authority are:

Class I or Main Roads. Roads designed to sustain axle loads of up to eight tons, with a gravel base and either a bituminous running surface on the central ten feet width, or a running surface stabilised by other methods such as with cement or resins. Width of carriageway twenty-four feet and cleared verges eight feet wide between the edges of the carriageway and the inner edges of the side ditches.

Class II Roads. Similar to Class I but with gravel surface only.

Class III Roads. Similar to Class II but with gravel surface omitted.

Class IV or Country Roads. Similar to Class III but not to such rigid standards.

107. *Bridges.* New bridges on all the above types of roads will be designed to the Crown Agents Heavy Loading Standard giving a maximum axle load of twelve tons. Short bridges on Class I roads will have a minimum width of twenty-four feet between parapets. In the case of long bridges on Class I roads and bridges on Class II and III and IV roads the width between parapets will be twelve feet.

108. These dimensions will not necessarily apply to special bridges such as the new Beit bridges over the Kafue or Chambesi rivers.

109. The speed at which Class I or main roads are built has a marked effect on their capital cost since if a given stretch of road is to be built in half the normal time it follows that twice the normal quantity of roadmaking equipment and staff has to be employed on it. Public Works Department Class I roadmaking capacity has been estimated to be 30–40 miles a year. An estimate of contractor capacity (which in turn is related to Public Works Department staff since the work requires Public Works Department designing and supervision) has been placed at sixty miles a year. This means that, unless abnormally high costs are to be incurred, the Territory's maximum Class I roadmaking capacity is about 100 miles a year, employing available contractor capacity to the full and engaging extra Public Works Department staff to design and supervise the work. A further consideration is that such work when done by contractors is, for obvious reasons, more expensive than if it were undertaken by Government.

110. *Immediate territorial Class I road requirements.* These are considered to be :

(i) *Lusaka–Kafue* 35 miles. Under construction. To be completed in 1948.

(ii) *Kafue–Chirundu* 58 miles. Being surveyed as to best alignment over the hills. Proposed to give bituminous surface and wider bridges for sections between Kafue and hills, and from hills to Chirundu, total 38 miles ; and to effect improvements only (corners, culverts etc) on the middle hilly section (20 miles), which has a good gravel surface and drainage.

(iii) *Lusaka–Broken Hill, and junction to Chisamba station* 102 miles. To be surveyed with a view to better or shorter alignment. Chisamba section being " cured " in 1948 by extensive gravelling. It has been suggested that the new road should follow the railway line and thus save possibly 20 miles. Factors against this are (*a*) the existing road has to be kept open and improved and serves several farming areas (*b*) there is a difficult river system to negotiate on the shorter " railway route " (*c*) the value of the existing road and formation would be largely lost, and much of the initial cost duplicated in the new route.

The need for an expert road survey is apparent.

(iv) *Copperbelt roads* :

(*a*) Mufulira–Kitwe	...	27 miles	To be completed 1948.
(*b*) Kitwe–Chingola	...	23 miles	To be undertaken in 1949.
(*c*) Ndola–Mufulira	...	40 miles	Start in 1949 : finish in 1950.
Total Copperbelt roads		90 miles	

It should be emphasised that the above work has had to be undertaken by the Public Works Department as none of the large contractors who were told of the programme submitted any satisfactory schemes. Not all the Public Works Department equipment required has yet arrived so the completion dates given must be regarded as targets rather than firm commitments.

(v) *First 30 miles from Livingstone.* 30 miles. This section of the Livingstone–Lusaka road runs through deep sand. All attempts so far to achieve a stabilised surface have failed and the only solution appears to be to stabilise with bitumen. The road will have to be re-aligned and designed to obtain the most economical route possible.

(vi) *Twenty miles north and twenty miles south of Mazabuka.* 40 miles. This section of the Livingstone–Lusaka road runs through most difficult soils from a road-making point of view. It may be sufficient to bring it up to Class II (gravel) standard to start with, but heavy farm traffic will necessitate a Class I surface whenever this can be provided. Cost has been estimated on the latter basis.

(vii) *First 10 miles from Lusaka on Great East Road.* 10 miles. The density of traffic on this section necessitates it being brought up to Class I standard.

111. *The Cost and the Time.* From the above brief description of the Territory's immediate main road requirements it will be seen that they total 365 miles. As tenders will be called for, in due course, for some of the work it has been considered inadvisable to give estimates of cost in respect of each of the items (i) to (vii) above. The total cost, however, has been estimated at approximately £900,000 including the work to be completed in 1948 on the Lusaka–Kafue and Copperbelt roads, part of the expenditure on which has already been approved and incurred. At the con-

struction capacity rate mentioned in paragraph 109 above (100 miles a year maximum) and allowing for 65 miles completed in 1948 it will be clear that the large programme contemplated will take at least three years *from the date when the surveys and designs of the various roads are sufficiently far advanced to allow work to begin.* This latter point is important since Class I roads, like a building or any other major engineering project ,have to be carefully designed first ; and a great deal of preplanning has to be done in the way of opening quarries and obtaining supplies of materials and equipment if the work is to proceed smoothly and without hold-ups. Indeed it is estimated that it takes a contractor new to the country nearly a year to get his full forces deployed for a major road work.

Note : Messrs. Welensky and Morris consider that the main or Class I road programme as set out above, is inadequate and that there should be a through Class I road from Livingstone to Ndola (520 miles). The estimated cost of this road is £1,437,500 of which £550,000 has been provided in the revised Loan programme for the sections :

(i) Lusaka—Kafue	35 miles.
(iii) Lusaka—Broken Hill	90 miles.
(v) First 30 miles from Livingstone	30 miles.
(vi) 20 miles north and 20 miles south of Mazabuka	40 miles.
	195 miles.

referred to in paragraph (110) above. It will be seen from the above that the proposal of Messrs. Welensky and Morris would involve an additional expenditure of approximately £900,000.

112. *Special Roads.* In addition to the above main roads there are other roads of a somewhat special nature which will have to be built sooner or later. These are the Groundnut scheme road to the Mumbwa area, estimated to cost £90,000 (which sum has been included in the main or Class I provision in the revised Loan programme in the touching faith that the Overseas Food Corporation will extend its activities to this Territory) ; the Livingstone-Mambova road, estimated to cost £38,000 ; and the important route over the sandy wastes to Barotseland via Luampa regarding which expert investigations and soil analyses are now proceeding, and for which only a tentative estimate of £450,000 can be given at present.

113. *Other roads.* The need was stressed above of a balanced territorial road development. Such a view will no doubt be strenuously supported by those whose lot is cast in the remoter parts of this large Territory. The Road Plan now presented provides £300,000 for Class II to IV roads, too numerous to mention here but of telling importance to the Territory's economic development. The mileages involved are :

Class II	135
Class III	1,331
Class IV	1,064

114. *Bridges and Culverts.* None of the estimates of road costs above has included provision for major bridges and culverts. These have to be calculated on a per foot instead of a per mile basis, and are the crucial part of any road system. The sum of £150,000 has been provided in the revised Loan programme for this purpose. It is hoped that the expenditure of this sum, if approved, will see the end of " bush " or wooden bridges on the Territory's Class I and Class II roads, particularly in the Northern Province.

115. *Plant and Equipment.* So far under the original Loan programme (item E.4) the Public Works Department has ordered, and acquired the major part of, £76,000 worth of road-making plant and equipment ; and this will enable the Department to undertake 30–40 miles a year of main road construction. Additional plant, however, is required for the " Other Roads " programme over the ten years ; for minor aerodrome construction and maintenance ; and (as is so often urged) for mechanised road maintenance now that the good old days of the earth pan and shovel have passed. The need for greater mechanisation is inescapable. An additional £100,000 has been provided in the revised Loan programme for the purchase of plant and equipment, and represents a very considerable reduction in what the Public Works Department asked for.

116. *Strips.* Before proceeding to a summary of the expenditure recommended it is necessary to deal with the question of whether any saving in the considerable expenditure proposed to be incurred in the construction of Class I tarmac roads could be effected by substituting driving strips, as found in Southern Rhodesia. Extensive investigations have been made into this subject by the Director of Public Works. The only feature in favour of strips is their lower initial cost. Their main disadvantages are well known, but it is not always appreciated that before strips

are laid a gravel base must be constructed of much the same standard as that required for carpet surfacing, and that the strips usually have to be removed before the latter is laid later on. To accommodate the larger lorries now operating in the Territory strips wider than those necessary for motor cars would be needed, thus raising the cost more nearly towards that of a carpet. A true comparison of cost can only be made by calculating the relative construction and maintenance costs over a period of development from strips to the double lane carpet. On this basis the strip policy is the more costly. Stabilised gravel bases and thin carpets are now generally used in South Africa and elsewhere and in Southern Rhodesia where strips are no longer laid. The Public Works Department have set up a soils laboratory and it will be possible to design on modern economical lines which may in some cases reduce the rates which have been allowed in these estimates if suitable gravels are encountered. To adopt the expedient of strips at this stage of development would be a retrograde step and one which would be more costly to the Territory in the long run.

117. *Summary of proposed Expenditure on Roads, Bridges and Culverts and Roadmaking Plant and Equipment.*

	£	
Class I roads ...	908,900	(including Groundnut Scheme Road).
Class II, III and IV roads	300,000	
Bridges and Culverts	150,000	
Plant and equipment	176,000	(includes £76,000 already purchased).
Total	£1,534,900	

III. General Building and other Works.

118. 1948 *Public Works Department programme under "Public Works Extraordinary."* Under this heading consideration is given to the building and general programme of works of the Public Works Department. A rapid perusal of the 1948 printed estimates under Head 30—"Public Works Extraordinary" will indicate that the value of the works actually to be done by the Public Works Department in 1948 is :

	£
(*a*) Buildings	356,930
(*b*) Communications ...	105,450
(*c*) Aerodromes	66,200
	£528,580

If an adjustment is made in respect of the revised European housing programme now proposed, whereunder the Public Works Department will build forty houses, and Contractors 114 (albeit with Public Works Department supervision) the above total can be increased, after allowing for the £78,000 originally provided under Public Works Extraordinary item 65 European Housing, by a further £20,000, making a total of £550,000 in round figures.

119. 1948 *Public Works Department programme under "Loan Works."* The above construction figure takes no account, however, of the building in 1948 being undertaken or to be undertaken by the Public Works Department under the revised Loan programme. Under "Loan" the Public Works Department is due to build in 1948 the following items :

		£	
A. Health ...	Choma Hospital	14,000	(new work).
B. Agriculture ...	Agriculture H.Q. offices at Lusaka	2,500	(new work).
J. General Building	Police H.Q. office at Lusaka...	5,000	(new work).
	Police Camp, Wusukili ...	25,000	(new work).
	Public Works Department Workshops, Lusaka ...	41,000	(completion)
	Stores Dept., Buildings, Lusaka	10,000	(new work).
	Increase of Central Office accommodation, Lusaka ...	10,000	
		£107,500	

120. There are always building "emergencies" during the year ; something has to be put up in a hurry as top priority. One or two such emergencies are looming up already. It is safe to allow £10,000 for such works which, nine times out of ten, have to be undertaken as a rush order by the Public Works Department.

121. The sum total of paragraphs 118 to 120 above is that the Public Works Department is faced in 1948 with a programme of works of various kinds actually to be undertaken by the Department of £650,000, or thereabouts.

122. This, however, is not the complete picture for there still falls to the Public Works Department the designing of all but the larger of the works put out to contract, and the supervision of all. When one considers such contract works now in progress or shortly to be begun which require Public Works Department supervision —the Livingstone Airport, the Lusaka-Kafue road, a hundred or so European houses, the Lusaka School Hostels—to mention only a few of the major ones, and then considers further the designing or architectural work that has to be done by the Public Works Department for other works, large and small—main roads, hospitals, schools, offices—one begins to have some faint conception of the magnitude of the task. *That task cannot be carried out without adequate staff*—and until adequate staff can be obtained the department will not be able to carry out its programme. Supervision of major contract work is not merely handing the plans to the contractor and finally measuring the building before payment. It demands constant attendance by one or more members of the Public Works Department if the best value is to be obtained from the expenditure of public funds. Indeed, this Government will not be able to avail itself to the full of the civil engineering capacity now being offered by contractors until the Public Works Department staff has been substantially increased.

123. *Public Works Department Loan Staff.* Before dealing with the present vacancies in the department, mention must be made of the staff known as Public Works Department "Loan Staff—roads" or "Loan Staff—buildings," as shown under Appendix "A" and Appendix "C" of the original loan programme (items E.5 and J.22). With the present shortage of staff both Departmental and Development (Loan) it has proved impossible to say certain staff shall be engaged only on Departmental projects and certain staff on Loan Works. If the best value is to be obtained from the existing staff it has to be used on the work (or supervision of contract work) most urgently needed, irrespective of whether that work is "Public Works Extraordinary" or "Loan." It is the same with "Other Charges." Without an elaborate accounting system, which neither exists nor is at present considered to be justified, it is impossible to allocate, say, transport charges nicely between Departmental and Loan Works. In short, until a separate Public Works Department Loan Works staff is set up (if ever), and during the present period of acute staff shortage, it is impossible to separate Departmental from Loan activities. It is recommended, therefore, that after 1948 Public Works Department Loan Staff should not be shown separately but should be included in the departmental staff (Head 28—Public Works Department) under the existing head there of "Temporary Staff." In later years, when vacancies have filled up, it may prove possible to debit Loan Works with a proportion of the cost of temporary staff so employed in the ratio of total Departmental expenditure to total Loan expenditure on capital works, crediting General Revenue annually in arrear with the amount so charged to Loan. The same procedure should be applied to departmental charges in respect of the operation and maintenance of (Loan) plant and equipment. If the departmental vote is over-expended, the amount should be debited to Loan. Admittedly the procedure recommended above tends to obscure the true cost of Loan works, but it is not possible to devise any better method at present for what are, after all, Government works be they Departmental or "Loan."

124. *Staff Vacancies.* There are at present :

Departmental :
- 1 Senior Executive Engineer ;
- 1 Executive Engineer ;
- 2 Assistant Engineers ;
- 1 Architect ;
- 1 Assistant Architect ;
- 2 Inspectors of Works ;
- 2 Road Superintendents.

Development (Loan) :
- 1 Engineering Assistant ;
- 1 Assistant Architect ;
- 1 Architectural Assistant ;
- 3 Inspectors of Works ;
- 2 Senior Road Superintendents ;
- 3 Road Superintendents ;
- 3 Road Foremen ;
- 2 Bridge Erectors ;
- 2 Road Plant Operators ;
- 6 Mechanics ;
- 1 Assistant Accountant.

The lesson to be learnt from this formidable list is that to-day neither engineering staff with the necessary experience of supervising contracting work in the Colonies nor technical staff such as Inspectors of Works, Road Superintendents, or Road Foremen, are attracted by the Northern Rhodesia terms of service—a contract for two to three years at *permanent staff rates* plus a gratuity. The terms of service for the whole of the Public Works Department temporary staff require to be revised at an early date. It is felt that the right type of man would be attracted by a gross salary, including cost of living allowance and rent for housing, of so much a month and that it is hopeless to try to relate too closely the salaries of such temporary staff to those of men in the permanent Service. The alternative is to establish block votes for the various types of posts—Assistant Engineers, Engineering Assistants, Road Superintendents, Inspectors of Works, Road Foremen and Building Foremen—and let the Director of Public Works engage the men, offering a monthly or three monthly agreement, *at current market rates*. There should be Public Works Department staff from Palestine that would be attracted by these terms, and if a recruiting campaign for technical staff were undertaken in Southern Rhodesia and the Union of South Africa it might well show good results.

SECTION 15.

Local Authorities' Development Schemes.

125. *Financial provision.* Provision exists at present in the original Loan Programme (item I.1) for loans to Local Authorities of £250,000. Up to December, 1947, long-term and major loans to Local Authorities had been authorised to the value of £93,010, of which £9,400 had been issued (small and short-term loans to Local Authorities are otherwise provided for under Head 33—Subventions, item 36 : Loans to Local Authorities).

It is clear that once the Development programmes of Local Authorities are fully worked out and long-term borrowing for major projects begins in real earnest the present allocation of £250,000 for this purpose in the Loan programme will be quite inadequate. In the revised Loan programme now submitted for approval the provision for loans to Local Authorities has therefore been increased, on the advice of the Commissioner for Local Government, to £500,000. It may be necessary to increase the provision still further once the development plans of Local Authorities begin to take more definite shape—when better water supplies, proper sewerage, better housing and better roads cease to be dreams of what such and such a town or municipality should have and become definite projects to be carried through to realisation.

126. *Local Development Schemes.* The Commissioner for Local Government is at present preparing schedules of the total capital works requirements of Local Authorities phased over the next year, the next three years, and over the ten year period up to 1956. The first two schedules will, it is hoped, be ready for examination by the Development Authority by the end of 1948 and will be based on the firmest estimates possible. Some of the larger Local Authorities, however, have not yet begun to estimate their requirements beyond the immediate present and, indeed, are not in a position to do so, or prepare a detailed development programme for their areas, until they obtain the assistance of an engineer. As soon as the permanent African Housing programme is well launched the Chief Engineer of the Local Government Department will be available to help Local Authorities in this task.

127. *Procedure for obtaining loans.* In order to facilitate business the Commissioner for Local Government has suggested two modifications in present procedure. The first is that all applications for long term or major loans by Local Authorities should be submitted to the Development Authority by the Commissioner for Local Government in the first instance. In the case of these long-term loans for major projects it is considered that they should be finally approved by the Development Authority which has control over Loan Funds, and should not be referred, as appears to be the case at present, to the Standing Finance Committee. In the case however, of short-term or small loans to be met from the provision made under Head 33, item 36, the Development Authority would submit its recommendations regarding each application to the Standing Finance Committee for the latter's final decision. The second suggestion made by the Commissioner for Local Government does not fall strictly within the purview of the Development Authority since it is not connected with the Loan programme or the Development Plan generally but concerns small loans to Local Authorities, particularly the smaller Local Authorities, for such purposes as minor works and repairs. It is recommended in regard to such loans that the Commissioner himself be empowered to grant such small loans up to individual amounts not exceeding £250 per annum, or a total for all such loans of £2,500 in any one year, subject to the regular submission by him to the Standing Finance Committee of Schedules of loans so granted under Head 33, item 36. This is admittedly a new principle—but it is designed to help small, but none the less

important, local projects on their way with the minimum of reference to a central body not in a position to comprehend parochial detail.

SECTION 16.

African Urban Housing.

128. The African Housing Department, formed in 1946, the objectives of which are set out in paragraphs 221–234 of the Development Plan, operates so far as its permanent housing programme is concerned, and also as regards part of its staff, from funds provided under the Loan. The allocation for this purpose in the original Loan programme was £1,000,000. The Department has, in fact, two housing programmes—the first to provide, as soon as possible, 5,500 temporary houses to afford accommodation for Africans at present unhoused; and the second to build in five years 6,500 permanent houses.

129. *Temporary Houses.* Funds for the erection of 5,500 temporary houses were provided in 1946 and 1947 by Special Warrants under Head 41—"Local Government and African Housing"—sub-head "Loans to Local Authorities—Temporary African Housing," amounting to a total of £76,975. It proved impossible, however, to build the total number of 5,500 temporary houses then known to be required by the end of 1947, and 1,500 still remain to be built in 1948. The reason for this delay is that certain Local Authorities failed to complete the year's building programme (some even to start it) on account of their inability to obtain contractors for the work. At the end of 1947, as a result of this and for other reasons, the sum of £32,545 out of the funds originally voted remained unexpended and has been revoted. This carryover will provide for the 1,500 houses still remaining to be built and for a further 500 houses (at £13 each) which the Commissioner for Local Government considers it may be necessary to build due to his inability to provide permanent houses fast enough to cater for the rapid increase in urban population. It should be noted that the expenditure in respect of most of these temporary houses is recoverable by means of rent.

130. *Permanent Houses.* The programme is to build in five years 6,500 houses at a basic cost, including services and overheads, of £150 each. 400 of these houses will be built by contract in 1948 (80 at Monze and Pemba, and 320 at Ndola) and 80 by the Department. In 1949 at least 1,000 houses will be built by contract and a further 80 by the Department. The contracts let require that the total number of 6,500 houses should be completed in four years, that is, by mid 1952. The possibility of a rise in the cost of these permanent houses cannot be disregarded. It may prove necessary to modify the design as experience is gained of the suitability of the present version of permanent African dwelling, and it will, without doubt, be necessary to build a few better type houses of three or four rooms for the better class African, charging the full economic rent for these. It is believed that the provision of slightly better houses than normal will serve as an inducement to some Africans to strive for something better than that provided for the ordinary citizen. Both the possibility of an increase in the cost of the standard house and the need to build a few better class houses (while at the same time adhering to the original target of not less than 6,500 houses) may necessitate a further sum of £75,000 being provided within the next two or three years over and above the £1,000,000 allocation already made in the Loan programme.

131. *Other African Housing.* In order to assist the Northern Rhodesia Police, whose needs are particularly acute, the Commissioner for Local Government and African housing has undertaken to build for the Police in 1948—27 African houses at Livingstone, 20 at Lusaka, and possibly 45 at Wusukili Compound. This undertaking is on the strict understanding that the houses to be built are of standard design and that they will be acceptable with pit latrine or bucket-type sanitation.

SECTION 17.

African Education.

132. The total amount approved for allocation to African Education under the £13 million Ten Year Development Plan is £1,486,000, of which £856,140 comes from Northern Rhodesia Development Account; £543,860 from Colonial Development and Welfare grants and £86,000 from Loan Funds. There are fifteen development and welfare schemes (Head 35 items 25–39) eight of which are financed entirely from Northern Rhodesia funds and the remaining seven by means of 100 per cent. grants under the Colonial Development and Welfare Act.

133. *Head 35—Development and Welfare Schemes. General.* So far as expenditure in 1948 is concerned no changes are proposed in the amounts approved in the 1948 Territorial estimates. All schemes are in operation and the Director does not expect any of them to be overexpended nor will there be any measurable savings.

134. *Head* 35 *items* 25–32. These schemes, which are all financed from Northern Rhodesia funds, are recurrent in character and represent in fact the extension of normal departmental services. They cannot suddenly stop at the end of the ten-year development period and it is recommended, therefore, that from 1949 they should be transferred year by year to the Departmental Vote and shown as annually recurrent commitments thereunder. It is estimated that at the end of the ten year period the addition to recurrent Departmental expenditure so incurred would amount to £170,000, and the increase in 1949 to £65,000.

135. *Head* 35 *items* 33–37. These schemes are for capital expenditure only and are entirely financed from Colonial Development and Welfare funds. The only change proposed is that item 34 "Building Grants to Missions" should be increased from £72,500 to £122,500 and item 35 "Building grants: Village Schools" be correspondingly reduced from £227,500 to £177,500. The Director has recommended this readjustment because it was not fully known at the time the schemes were prepared what share in secondary and higher teacher training the Mission Societies would be able to undertake. It is now estimated that an additional £50,000 will be required for capital grants for mission, secondary and higher teacher training school buildings. At the same time the building capacity of Native Authorities and their requirements for village schools appears to have been over-estimated. Revised applications, as above, for assistance from the Colonial Development and Welfare Fund will be submitted to the Secretary of State in the near future.

136. *Head* 35 *item* 38—*Grants: Scout and Guides Associations.* This is a 100 per cent. Colonial Development and Welfare scheme ending in 1955. Thereafter, it may be assumed that there will be a contingent liability of at least £500 a year which will fall to be met either from Territorial funds or from some other source.

137. *Head* 35 *item* 39—"*Equipment: Provision of School Meals.*" This is for equipment only, such as cooking utensils, plates etc. and has nothing to do with the provision of the food, the building of accommodation or the employment of staff, which are matters for the local authorities concerned. So far as is known, no local authorities have yet applied for grants under this scheme.

138. *Loan Programme.* The approved allocation was intended to provide:

	£
Transfer of Headquarters to Lusaka	19,000
Secondary School Building	25,000
Technical School Building	12,000
Staff housing	30,000
	£86,000

139. *Transfer of Headquarters to Lusaka.* Provision for the transfer of the Department from Mazabuka to Lusaka and for staff housing has been transferred to block votes under Section J: General Building Programme. Next to the Department of Agriculture, which is placed first on the list, it is considered that the African Education and the European Education Departments have equal claims to be moved to Government headquarters at the earliest opportunity and to terminate their period of rustication at Mazabuka.

140. *Secondary and Technical School Buildings.* At present secondary education and artisan training are concentrated at Munali Training Centre (with the exception of some artisan training at Lukashya which will be mentioned later). The training of artisans is one of the most important factors in rural and industrial development, to say nothing of departmental requirements. Even more important is the need for more secondary education. Specialised training schools for African surveyors, foresters, agricultural instructors, veterinary assistants, teachers and clerks all depend for their success on a steady supply of pupils with a thorough general academic grounding. Not all will require a matriculation certificate but all will require some secondary training. It is not too much to say that the success of the Development Plan in this Territory very largely depends on the provision of adequate secondary education facilities for Africans so as to enable the African manpower of the Territory to be utilised to the best effect in the great tasks that lie before it.

141. *Munali Trades School and new African Secondary School.* Existing accommodation at Munali for secondary and industrial teaching is quite inadequate. The fact that present capacity of the secondary school there happens to be greater than the number of pupils coming forward for secondary education is fortuitous and a purely temporary situation. In any case such spare room as there is can be used in part for industrial training. There is at present provision for an annual entry of only thirty to the Munali Trades School. *This cannot be increased unless the secondary school is moved to another site.* Provision has therefore been made in the revised Loan programme for a new African secondary school near Lusaka at an

estimated cost of £72,000 including the necessary accommodation for staff. At the same time the amount of £12,000 has been retained for extensions to Munali which will then become purely a trades school. The actual site of this new African secondary school remains to be settled by the authorities concerned as well as several other matters of policy; and in the absence yet of a decision in the matter—which is urgent—the provision of £72,000 is tentative. It is considered, however, that this sum will provide what is required—that is adequate classrooms, pupil accommodation and staff houses—and that both for the sake of speed and economy elaborate school buildings should be avoided. As regards trained artisans from Munali the output of these cannot be increased overnight—in fact it will be at least two and probably three years before any appreciable increase in trained men can be expected—but in order to make sure of this it will be necessary to start building the new secondary school (and so ease the congestion at Munali) early in 1949.

142. *Other African Secondary Schools.* It is probable that within the next three years a junior secondary school will be required at Chalimbana and another in the Copperbelt area—possibly Ndola. These are estimated to cost £7,500 and £30,000 respectively. These sums are not included in the revised Loan programme but should be noted for inclusion in the Public Works Extraordinary programme in 1949 or 1950.

143. *Vocational Training Centre at Lukashya.* As stated above, the training of artisans is mainly concentrated at Munali, and so far as development funds are concerned that is the only centre. There is, however, another Government Institution at Lukashya, near Kasama, for the training, in the first instance, of ex-askari. The school opened in September, 1947, with fifty ex-askari drawn from each district in the Northern Province, for a two-year course in building, carpentry and thatching. It is planned to provide for a further twenty-five pupils in September, 1948. Since the school started the curriculum has been modified to provide for a two-years' course in either carpentry or building, not both, with a three-months' course in thatching for all pupils at the end of the second year. The staff consists of two African instructors, and a European Instructor-in-Charge whose wife is a part-time Welfare Mistress. The pupils receive an allowance of 20*s.* a month; most of them are married and have their wives and families with them. Pupils have been responsible for building their own accommodation, and the results have been most satisfactory.

SECTION 18.

Health.

144. The total allocation to the Health Department under the Development Plan is £1,598,000, which is by far the largest amount voted to any single department. Of this sum £700,000 is provided from the Northern Rhodesia Development account; £500,000 from Colonial Development and Welfare funds, and £398,000 from Loan funds. The revised Loan programme provides for an increase from £398,000 to £500,000 which, if it is approved, brings the total development allocation to Health to £1,700,000. There are fourteen approved development and welfare schemes (Head 35), of which ten are financed wholly from Colonial Development and Welfare funds and the remainder from Northern Rhodesia Development Account.

145. *Long-term Health Plan to be revised.* The two main criticisms common to most of the departmental plans, that capital costs were very much under-estimated and that recurrent costs were not related to the recurrent revenue of the Territory, apply with particular emphasis to the Health plan, because the Departmental building programme is very large and, with the exception of rural hospitals and dispensaries, the largest development schemes are all recurrent. The Director of Medical Services proposes to revise the whole plan as soon as possible with the object of reducing the recurrent element in the present schemes, and also to make more adequate provision for the training of Africans, especially women. Changing circumstances make such a revision imperative. The tendency to concentrate African population in development areas and the possibility of air ambulances to clear patients from Casualty Clearing Stations in the smaller centres to regional central hospitals render out of date the old conception of small and often ill-equipped and ill-staffed local hospitals in the bush. Immediate proposals for 1948 involve comparatively minor alterations to the approved estimates.

146. *Head* 35. *Development and Welfare Schemes. Item* 1. *Extension of African Medical Education.* This has been increased from £3,051 to £10,000 to provide for extensions of quarters for pupils at Lusaka Medical Training School and for additional nurses' quarters there.

Item 2. *African Urban Clinics.* Revised estimated expenditure in 1948 is £900, as against the original estimate of £500.

Item 4. Improved Hospital facilities at Lusaka, Ndola and Kasama. The amount of £5,000 approved in 1948 will be devoted entirely to the provision of an isolation block at Lusaka Hospital.

Item 5. Medical and Public Health facilities at Copperbelt Towns/ips. The Director of Medical Services no longer requires this scheme (£13,800 from Colonial Development and Welfare funds) and it is proposed therefore that it should be abandoned. The question of providing one or more Government hospitals in the area must receive early consideration, since the mining companies cannot and should not be expected to provide hospital facilities indefinitely for the general public.

Item 7. Additional Housing. Provision made for one house at revised estimate of cost.

Item 8. Hospital and Dispensaries, Feira. This has been reduced from £15,600 to £1,000 which, owing to building difficulties, is all that can be spent in 1948. The site for permanent buildings has not yet been settled. An inter-departmental survey is proceeding as to which is the best area.

Item 10. Recurrent costs of additional rural Dispensaries and Mine Township Clinics. Provision of £600 is proposed for recurrent costs at Kitwe.

147. *Loan Programme.* The approved allocation of £398,000 provided for a very extensive programme of new hospitals and extensions to existing hospitals, and it is now obvious that with building costs as they are to-day the original estimates are no more than token figures. The African and European hospitals at Broken Hill are being planned at a revised total cost of £150,000, as against £70,000, and building materials are being collected by the contractors. None of the other items have yet been planned; some may be abandoned, some may be increased in size and others reduced, but in order to retain them all as possibilities, for none can be regarded as luxuries, the original estimates have been arbitrarily increased by 40 per cent., and the total loan allocation from £398,000 to £500,000.

148. The Director of Medical Services has selected Choma, Fort Rosebery and Balovale (or Manyinga) hospitals, and the Entomological Laboratory, as the items requiring immediate attention, and provision is made for expenditure in 1948 for the preparation of sites and manufacture of bricks at Fort Rosebery and Balovale, and for preliminary work on the Entomological Laboratory at Ndola. The staff housing at the present Balovale hopital requires replacing urgently. Comparatively large provision is made for the Choma hospital to cover the cost of purchasing and converting warehouses and other buildings which, although not ideal for a hospital, offer a quick means of providing reasonable facilities to replace the appalling relics which go by the name of "hospital" at present.

149. These are all the works that can be attempted in 1948, but the Director of Medical Services is preparing preliminary plans for the Mental hospital and the rest of the programme will be revised and an order of priority prepared of works to be started in 1949.

SECTION 19.

European Education.

150. The amount approved for European education in the Development Plan was originally £250,000 shown as a block vote in the Loan Programme item K. Subsequently the Legislature approved the transfer of £150,000 for school buildings at Lusaka from Head J "General Building Programme" to Head K "European Education," so that the total allocation for European education is now £400,000. The Department has as yet no Development and Welfare schemes under Head 35 of the Estimates.

151. *European Education Development Plan.* The Director of European Education has recently submitted proposals for a schools building programme amounting to approximately £1 million spread over the ten years 1948–57. This sum is well in excess of the existing allocation for European education in the approved Loan Programme and it is felt that it would be premature to make any recommendations on the programme or attempt to indicate priorities until the Committee recently appointed to investigate European education in Northern Rhodesia has submitted its report and the Legislative Council has considered its findings and the financial implications. On the other hand it is clear that whatever the Committee's recommendations are some main essentials will remain the same and, if the development of European education is not to be unduly delayed, certain works should be undertaken in 1948. This review therefore, only deals with what must be done at once and what probably can be done in the near future within the limits of the funds known to be available for European education.

152. *Lusaka Schools Hostels.* The building of two school hostels at Lusaka, double storeyed buildings, each accommodating fifty pupils, has already begun but

the buildings will not be ready for occupation until 1949. The revised estimate of costs is £50,000 a hostel, an increase of £10,000 on the original estimate. Every effort is being made to finish these two buildings as soon as possible. With existing building capacity at Lusaka there is little hope that any other major school building can be started in 1948 at Lusaka.

153. *Lusaka Boys' School.* No less urgent than the hostels, however, is the building of a new boys' school for Lusaka, estimated to cost £30,000. The original plan for this school is at present being revised and if, as the 1948 building programme progresses, there is an opportunity of starting the work later in the year it will be given priority next in order to European housing and essential office accommodation.

154. *Other Works.* Outside the capital the most urgent needs are an infants' school at Broken Hill and one at Kitwe, in that order of priority, closely followed by similar schools at Luanshya, Mufulira and Chingola. Provision has been made at items K.3 and K.4 of the revised Loan Programme for funds to enable the first two schools to be completed this year and it is recommended that provision be made available, on the order of the Development Authority, for building the other three infants' schools whenever the chance offers of getting the building done. All these schools will be built to a standard design.

155. So much for the immediate programme. It concentrates entirely on accommodation for the pupils and although it by no means solves the overcrowding problem it will afford relief at the points of greatest pressure. But this is only part of the problem ; there remains the immediate need for increased housing for teaching staff ; and the much larger project of a Northern Rhodesia High School at Lusaka giving instruction for both sexes over the full academic and modern secondary range from Forms I to V and eventually Form VI.

156. *Housing.* Better classroom and hostel facilities must be balanced by the provision of housing for more permanent staff. It is well known that for years the Director has been obliged to engage a much greater proportion of temporary staff than he considered desirable because there has always been insufficient accommodation for an adequate number of permanent teachers. Sound development can never be achieved unless the " hand to mouth " method of staffing the schools is stopped ; and the only way of replacing temporary teachers by permanent ones is to provide the necessary accommodation. The Staff List of September, 1947, shows that out of one hundred mistresses, seventy-seven are temporary local appointments.

157. Immediate housing is required for staff as follows :

Livingstone	1
Mazabuka	4
Lusaka	4
Broken Hill	2
Ndola	1
Luanshya	10
Kitwe	10
Mufulira	6
Chingola	3
Total staff immediately requiring housing	41

Accommodation required is either houses, single quarters or rooms in Government hostels. This is a formidable list but does not by any means represent the full requirements of the department. It is, however, the best that can be done in 1948. Particular emphasis is laid on the need for more permanent staff in this Department. It has therefore been arranged that at the towns noted above the European Education Department's housing requirements will be given a very high degree of priority in 1948.

158. *Lusaka High School.* With major building projects such as this it is essential that the planning and designing be begun at the earliest date so that the start of the work, when building capacity and materials permit, need not be delayed. It is strongly recommended that once the size and type of the school has been decided, the work should be handed over to the architects at the earliest possible date. It will then be possible, for once, to have designs ready ahead of building availability. Indeed it would be prudent for all architectural work in connexion with the major buildings in the Loan Programme to be undertaken now.

159. *Transfer of Headquarters to Lusaka.* There can be no doubt that the headquarters of this department must be moved from Mazabuka as soon as possible, and not later than 1949. Too much is happening in the realm of European (and African) education to permit of the headquarters of these departments being rusticated any longer.

SECTION 20.

Posts and Telegraphs.

160. In view of the public criticism there has been recently of the Posts and Telegraphs system of the Territory the development plans of this department have been dealt with fairly extensively below.

161. The total present provision in the Development Plan for the expansion of post, telegraph and telephone services is £320,000 made up of £50,000 from Loan Funds (Loan Programme item G) and £270,000 from the Northern Rhodesia Development Account. There are as yet no schemes financed from the Colonial Development and Welfare Fund. The department's development proposals fall into two sections (*a*) improved telephone and telegraph facilities including a wireless network covering Government stations in rural areas and (*b*) increased postal services. This review will only submit concrete proposals in respect of the former as a comprehensive Postal Plan is still in course of preparation and will not be ready for submission to the Development Authority for another two of three months.

162. *Postal Plan.* It may be mentioned, however, that the Postal Plan, which will be based on information obtained from all areas, will include proposals for a number of new Post Offices in rural areas at an approximate cost of £20,000 and will represent two to three years' construction work. The Plan will also provide for considerable extensions to the Postal Training School for Africans at Livingstone, so as to give separate postal and telegraph training and for new or extended post offices at the main centres, particularly at Lusaka. The site and design for the new Post Office at Lusaka will be prepared in 1948. It has proved impossible to extend or improvise further makeshifts within the existing building.

163. *Telegraphs and Telephones.* It is no exaggeration to say that in these days of nervous tension an early and marked improvement in our telephone services has become not merely a matter of public convenience, but a public health measure.

164. *Main trunk telegraph-telephone link along the line of rail.* The sum of £50 000 was originally provided for necessary improvements along the main trunk route under the Loan Programme (item G.1). The latest estimate of cost, based on quotations or tenders is £104,000. This considerable expenditure is considered to be inescapable if an efficient service is to be provided. The improvements will replace the present single channel carrier equipment (designed in 1930 to meet requirements for fifteen years only) by three channel apparatus which will provide almost instantaneous trunk service and a direct connection between Lusaka and Bulawayo by telephone and telegraph instead of, as now, through Livingstone. The improvements will also give direct services from Lusaka to Kitwe and to Luanshya and two trunks to Ndola instead of one, as at present. The bulk of the expenditure will be on apparatus for which it is necessary to place orders about ten months in advance of delivery. The amount of £50,000 provided, as stated above under the original Loan Programme has already been committed and of the additional £53,000 odd required it is recommended that £30,000 be provided in 1948 to enable the necessary equipment to be ordered now so as to arrive early in 1949. Admittedly the expenditure is large but there will be a corresponding increase in Post Office revenue estimated at £16,000 a year (double the present revenue from this source) once the improvements are in operation. Future recurrent expenditure on this item (there will be none in 1948) should, it is considered, be carried from 1949 onwards by the Departmental vote

165. *Lusaka—Chirundu—Salisbury trunk.* Agreement was recently reached at the Central African Council for the establishment of a direct trunk line between Lusaka and Salisbury. Northern Rhodesia's share for the section Lusaka–Chirundu, based on firm tenders, is £35,000, all of which will be required in 1948. Covering approval is now sought for the inclusion of this item (G.2) in the revised Loan Programme. The expenditure was provisionally agreed to by the Standing Finance Committee in April so that orders for the equipment could be placed at once.

166. The financial effect of the proposals referred to in paragraphs 164 and 165 above is shown in the revised Loan Programme at Appendix II. They amount to an increase from the original allocation of £50,000 to a total of £139,000, £115,000 of which will be committed although not actually spent in 1948. Both telephone schemes should be completed by the end of 1949 or early 1950.

167. *Head* 35/105. *Scheme for linking District and Provincial Headquarters.* Provision was made at sub-heads 105 and 106 of Head 35 of the 1948 Estimates for an interim scheme for linking District headquarters by radio. This scheme, which depended on surplus military equipment, was intended only as a preliminary measure

and was to be followed by a permanent scheme designed to provide a longer range and greater reliability and also radio telephone as well as telegraph communication. The main scheme as originally designed would have cost £60,000. It has, however, now been modified by the Postmaster-General so as to give reliable radio telephone and telegraph communication between District and Provincial headquarters but only telegraphic communciation between the latter and all main centres. The reduced cost of the main scheme is £24,000—which, added to the initial expenditure of £14,000 on the preliminary scheme, gives a total of £38,000. The revised estimates under Head 35 now submitted provide this sum, of which £34,000 is required during 1948. It is recommended that the revised scheme and the amount now required be approved.

168. *Head* 35/106. *Recurrent Expenses.* As regards recurrent expenditure shown under the above sub-head the cost of staff and maintenance will be required for 1948 only as it is proposed to transfer such expenditure to the departmental estimates in 1949.

169. *Telephone Exchanges.* Provision has been made for a new telephone exchange at Lusaka at a total cost of £35,000 including cable and buildings. The present exchange is overloaded and cannot be extended. The new exchange, which will provide for a thousand lines, is designed for extension up to 1,500 lines and will have an estimated life of fifty years. If the maximum capacity is reached and a further new exchange beyond 1,500 lines becomes necessary at some future date this 1,500 line exchange is so designed that it can be broken down into self-contained units of 100 lines and each of these used to supplement existing exchanges elsewhere or to establish new small exchanges as they become necessary. The installation of the proposed exchange at Lusaka will release equipment at present in use there to extend the Luanshya and Mufulira exchanges to 180 lines each. If the scheme is approved and orders for equipment placed immediately the probable delivery date will be about June, 1949. Other new exchanges already provided for in the Estimates and on order are :

100 line extension for Kitwe.
40 line extension for Livingstone.
60 line extension for Ndola.
20 line extension for Broken Hill.
100 line exchange for Chingola.

170. *Rural Telephones.* All the equipment required is on order and this important service to the farming community will be extended and improved as fast as the Posts and Telegraphs Department can undertake the work. As the matter has called for some comment in the past it would be as well to mention that the installation of the telephone to the Fort Jameson aerodrome is in progress.

171. *Mobile Post Office.* The first unit will be delivered in May and put into operation in the Fort Jameson district as an experiment.

172. *Housing.* The increased efficiency of this department depends on adequate staff to run it. Fifteen houses are required in various parts of the Territory. Of these an attempt will be made to provide eleven in 1948.

SECTION 21.

Police.

173. In the course of the review of the building requirements of the various Departments the needs of the Police Force came prominently to notice. At most centres the housing of the African ranks of the Force is deplorable, particularly at Livingstone and in the old town of Lusaka, and in many cases the housing of junior European officers of the Police leaves a lot to be desired. There can be no argument about the importance of a contented and efficient Police Force and it is accepted that the policeman has just as high a priority as any other member of the public service in the matter of housing.

174. The Northern Rhodesia Police have no "development programme" under Head 35 of the Estimates but have provision of £15,000 under the original Loan Programme (item J.2) for the transfer of the Police to Lusaka. Provision has been inserted in the 1948 Loan Programme of £10,000 for initial expenditure in connexion with the transfer of the Police Depot from Livingstone to Lusaka and to enable the transfer of Headquarters to be completed.

175. *Police Depot.* It will be asked how building of this magnitude can be begun during the present period of shortage of materials and lack of building capacity.

The answer is again "self-help." The Commissioner of Police proposes to organise a Pioneer Unit of one Inspector and a team of artisans within the Force. If the financial provision inserted in the 1948 Loan Programme is approved this task force will begin with the clearing of the new Police Depot site, the building "off-site" of temporary sectionalised wooden quarters to house European officers and of dormitories for the African ranks employed, or in training, at the new depot. Financial provision includes £500 for lay-out of roads. It was considered to be important to engage professional advice (which is available) on the lay-out. Briefly the idea is to start preparing the permanent site of the depot, and while this work is proceeding, to erect temporary buildings (which can be used later and represent valuable accommodation in an emergency) to enable the new depot to begin its work, progressively moving trainees from the present deplorable accommodation at Livingstone.

176. *Transfer of Headquarters.* It will not be possible for some years to erect a Central Police Headquarters or Scotland Yard at Lusaka. Meanwhile, as recommended by the Police Commission of Inquiry, the transfer of Headquarters to Lusaka must be completed. If the provision inserted in the Loan Programme is approved the transfer will be effected by the building of a fifteen room office block of the austerity type (similar to that built for Medical Headquarters) and a minimum of four European houses in 1948, the remaining four houses required being built in 1949.

177. *Police Camp, Wusukili Compound.* This item was originally shown in the Loan Programme (item J.20) as "Police Camp—Mindolo." The Development Authority agreed that the Wusukili Camp should be built instead as being the more important, and preliminary investigations have been proceeding for some time. The Camp consists of four European houses, forty-five African quarters, a three-office block, lock-up, etc. The larger African establishment at Wusukili requiring forty-five African quarters as against only thirty-three at Mindolo and rising building costs have necessitated the provision being increased from the original figure of £19,000 to £25,000.

178. *Head 30 Public Works Extraordinary item 22 "African Police Quarters, Lusaka."* A sum of £3,000 has been provided to build twenty new quarters in 1948, and the work will be undertaken by the Public Works Department or the African Housing Department. The state of the present Town Police lines, situated on low-lying ground behind the Synagogue, necessitates their removal at the earliest possible date. The remaining sixty-two African quarters required should be built in 1949.

179. *Housing.* The Police Force require a minimum of six European houses on the Copperbelt in 1948, and have to be catered for specially since European Police officers have to live in close proximity to the Police camp. This housing cannot, therefore, be part of any general housing scheme in the larger towns, and will have to be undertaken, if possible, by the Public Works Department.

180. *Other Works.* Another nineteen African quarters, apart from the eight quarters being built in 1948, are required as soon as they can be built for the permanent detachment at Livingstone ; and if there is to be adequate control of immigration into Northern Rhodesia from the South the Chirundu Immigration Post comprising one European house, nine African quarters and a small office and lock-up should be built as soon as a suitable site has been selected. It is proposed to submit separate applications for funds under the Head "Public Works Extraordinary" for these works in the near future.

SECTION 22.

Prisons.

181. So far no work has been attempted under item J.8 of the Loan Programme which provides £123,000 for the Prisons Department. The Commissioner of Prisons is none the less anxious to begin his programme of expansion since both Lusaka and the Copperbelt badly require new Central Prisons ; and some sort of Bortstal institution or reformatory is also required to deal with juvenile delinquents.

182. *Housing.* Apart from the need for new gaols, increased housing for European staff, which will enable additional Prisons staff (for which vacancies exist) to be recruited, will allow of more vocational training and extension of the Progressive Stage system in existing prisons. This additional staff will also facilitate the construction of houses and other buildings by the department, using convict labour. The Prisons Department requires eight houses in 1948 only three of which can be built departmentally.

183. *Lusaka new Central Gaol.* Prison design and architecture is changing rapidly with the times. In order to be up to date the Commissioner of Prisons proposes to consult H.M. Prison Commissioners during his forthcoming visit to the United Kingdom, regarding the design of the new Lusaka and Copperbelt prisons. Meanwhile it is a matter of urgency that the new Lusaka Prison site should be cleared and prepared, and a prison camp established at the site to get on with this work and at the same time relieve pressure in the present Lusaka gaol. Layout is important and it is hoped to engage professional advice on this in the same way as with the Police depot. To meet the expenditure that, it is hoped, it will be possible to incur in 1948, £10,500 has been inserted under item J.8 of the revised Loan Programme to provide for two European houses for prison staff on the site, layout, construction of prison camp to clear the site, boreholes, burning of bricks and making of roads.

184. *Other Works.* The Borstal institution, the new Mazabuka prison, and the new Central Gaol on the Copperbelt cannot be attempted in 1948. The building of workshops for vocational training at the existing Lusaka and Livingstone gaols is being dealt with departmentally.

SECTION 23.

Civil Aviation.

185. Civil aviation presents ever increasing demands if Northern Rhodesia (which unlike other territories, inherited almost nothing in the way of aviation facilities from the war) is to discharge its international obligations by providing adequate aeradio and meteorological services and safe airfields. The commitments seem to be inescapable, but the cost is heavy. It is to be hoped that some of the cost will be recoverable in respect of services which are of no direct benefit to the Territory.

186. *Housing.* The authorised European establishment of the Department is now seventy-two—for which twenty houses are required in 1948 (three at Lusaka : four at Ndola : six at Livingstone, and seven at Kasama) and a further twenty-seven houses as early as may be in 1949 to accommodate the staff still unprovided for.

187. *Airfields.* Equal sums of £33,000 were provided in 1948 under Head 30 Public Works Extraordinary items 126 and 127 for " Aerodrome Contruction " and " Aerodrome Buildings." The former item includes provision for the new aerodrome at Mongu, the survey and design of which is proceeding. This work will be started in 1948. The proposed aerodrome at Fort Rosebery will have to wait until next year.

188. *Lusaka aerodrome.* Within the next three or four years consideration will have to be given to moving the Lusaka aerodrome out of the town, as recommended by the Town Planner. Apart from the fact that the land occupied by the aerodrome will eventually be required for township expansion there is the further consideration that good building land *in the vicinity* of the aerodrome cannot be built upon at present without reducing the safety factor of the aerodrome. It has been very tentatively estimated that to move the Lusaka aerodrome to the new site selected for it on the road to Chilanga (Great North Road) will cost not more than £250,000. It is considered that in view of other heavy commitments, not the least in connexion with the Livingstone airport, this is one of the projects that can wait. No provision has therefore been made for it in the revised Loan programme.

189. *Livingstone airport.* From such research as has been possible into the records of the past it appears that it was decided to go ahead with the Livingstone airport before any accurate estimation of the total cost was possible. In 1945 and 1946 mention was made of a cost figure of £250,000 : in the 1947 Loan programme approved by the Legislative Council on 12th February, 1947, the sum of £350,000 was provided for " Aerodromes " : in the 1948 Loan programme, formally approved pending this review, on 16th December, 1947, there appears " £350,000 Livingstone airport " under item F.1. The latest estimate, now that considerable progress has been made with the work and, for the first time, the necessary data is available on which to base firm estimates and banish imponderables, is £643,000—*which is the minimum sum for which the work now in hand can be completed.* It is not proposed here to enter into details of how the cost of this project has doubled, but an explanation is given in a memorandum prepared by the Director of Public Works and Director of Civil Aviation which is reprinted at Appendix V. It should be noted that the sum of £643,000 now submitted for approval in the revised Loan programme (item F.1) provides for only one subsidiary runway and Stage 1 only of the terminal buildings. This is considered to be adequate at the present stage of the development of this project, bearing in mind that the new Livingstone airport has yet to make its mark with trunk route operators as well as tourist and other traffic, and that the possibility of competition eventually from a similar or better airport in Southern Rhodesia cannot be excluded. If, however, the Livingstone airport does begin to

attract trunk route airlines and all other types of aircraft (as it should, being first in the field) so that it becomes the main airport of entry into Southern Africa then the extension of the terminal buildings to Stages 2 and 3 to meet the added flow of traffic will be inevitable.

190. If the full scheme were proceeded with, involving a second subsidiary runway, a parallel taxi-track and the extension of the terminal buildings to Stages 2 and 3 a total sum of £830,000 would be required, made up as follows :

	£
Stage 1 :	
Main runway, hardstanding, drainage, lighting, staff accommodation, terminal buildings, approach road etc. ...	603,000
One subsidiary runway	40,000
	£643,000
Stages 2 *and* 3 :	
Parallel taxi track	110,000
Completion of terminal buildings	37,000
Second subsidiary runway	40,000
	£830,000

SECTION 24.

Development of Tourist Traffic.

191. During the course of this review the importance of developing tourist traffic in the Territory, and the high potential of " tourism " as a revenue earner, (and as an invisible export in the balance of payments position) were brought prominently to notice. More tourist traffic depends basically on better roads, more rest camps and better hotels ; but it depends also on putting the Territory's attractions " into the shop window," on advertising by posters, pamphlets, maps, and publicity generally what Northern Rhodesia has to sell to the tourist in the way of scenery and objects of local interest. There are great possibilities of development at Livingstone and at Abercorn and at many other points between these termini.

192. Detailed plans have not yet been worked out by Local Authorities or by Government, but it has been considered wise to earmark for the development of tourist traffic the sum of £20,000 from the general Unallocated Balance of the revised Loan Programme.

193. If the new Livingstone Airport is to be made to yield its full dividend, the early establishment there of a large hotel to attract air travellers " to stop over " is essential. If what this Territory has to offer the tourist is to be properly known there must be a Tourist Office or Bureau at least at Livingstone and possibly at other centres. It is recommended that a full-time officer with executive powers be appointed by Government to help organise, in consultation with Local Authorities, this important industry.

SECTION 25.

Financial Conclusions.

194. *Short-term Cash Position : Need for Working Balance.* Earlier in this report (paragraph 27) the opinion is expressed that so far as the availability of money is concerned, the 1948 revised development estimates and the 1948 loan expenditure may safely be approved. It is, however, of interest at this stage to discuss the extent to which proposed expenditure for 1949 (other than that from Colonial Development and Welfare grants) can be met out of present resources. In 1947 expenditure of £389,761 in anticipation of the raising of a loan was incurred, and the proposed expenditure for 1948 totals £2,240,000. The available cash balance of £4,402,377 at the end of 1948 will thus be reduced to £1,772,616. A large part of this latter amount will be required for a working balance to meet day-to-day needs. It is difficult to estimate what the amount of that working balance should be, but as the greater part of the Territory's revenue does not accrue until the second half of the financial year it is probable that the working balance required will be not less than £1,000,000. The available cash resources at the beginning of 1949 may thus be put at approximately £750,000.

195. At first glance it would seem that there will be insufficient funds to finance the proposed 1949 Development programme costing £1,675,000. While, however, for the limited purposes of the analysis in section 5 of this report it was only necessary to presume that the budget would be balanced in 1949, there is, in fact, every likelihood that there will be a substantial excess of revenue over expenditure in that

year. Taking this into consideration, and at the same time bearing in mind that the total Development " bill " for 1948 and 1949 may not be achieved for lack of staff or materials, there is no good reason why it should not be assumed that the Territory will be able to meet out of the funds available from territorial sources the cost of that part of the programme for 1948 and 1949 which it actually proves possible to undertake in these years. Clearly, though, there will be need to obtain a substantial surplus of revenue over expenditure in 1949.

196. *Long-term Financial Position.* In regard to the long-term position, obviously no reliable estimate can be made at this date of revenue and expenditure in the seven years 1950 to 1956, but it is nevertheless desirable that an effort should be made to indicate possibilities. The first step must be to show requirements for the carrying out of the Plan :

	£
The total estimated cost of the Plan is	16,000,000
From this can be deducted Colonial Development and Welfare assistance to a total of	2,500,000
	13,500,000
Deduct also Loan expenditure incurred in 1947 and charged to territorial account	137,000
This leaves to be found from territorial sources	£13,363,000
The balance available at end of 1948 is say, ...	4,402,000
From which must be deducted a working balance of, say ...	1,000,000
Leaving available	£3,402,000
The balance to be found between the years 1950 to 1956 for the completion of the Plan is, therefore	£9,961,000

197. The Territory will necessarily have to raise the greater part of this amount of nearly £10 million by way of loan but the desirability of economy in the framing of the annual budgets so that the greatest possible amount of development expenditure may be financed out of yearly surpluses, so restricting the amount of money to be provided by way of Loan, is obvious.

198. Assuming, however, that it is decided to raise a loan of £8 million, then a sum of nearly £2 million must be found out of surplus balances accumulated over a period of eight years from 1949 to 1956. What are the possibilities of accumulating such a surplus ? The opinion has already been expressed that there should be a substantial surplus in 1949. The wide demand for copper is likely to persist for some years, according to well-informed opinion, and though there may be a drop in sale price, production at the high level which it is reasonable to expect, even if sale price shows a considerable decrease, should result in the Territory receiving substantial revenue from income tax. While the future level of production and price are matters on which it would be unwise to dogmatise, it is considered to be reasonable to assume there is every likelihood of surpluses of not less than the required minimum of £1,961,000 being accumulated over the remaining period of the Development Plan.

199. *Development Expenditure : Recurrent Commitments.* It is convenient at this point to emphasise once more that every effort should be made progressively to incorporate recurrent Development expenditure (except for projects of very limited duration) in Departmental Votes, so that this process of assimilation will be completed by 1950. Apart from the advantages in such a course already referred to in paragraph 12 of this report (namely, that the recurrent expenditure commitments commitments of Development if regularly and progressively absorbed in Departmental votes would enable the financial implications of the Development programme on the Territory's budgetary position to be appreciated more clearly) there is the further attraction that by this means more of the territorial Colonial Development and Welfare allocation of £2½ million would become available for capital works.

200. *Possible increase in the revised Loan programme from £8 million to £9 million.* In view of the probability that the Territory will accumulate substantial annual surpluses during the course of the programme and should certainly be in a position to meet the service charges of any loan, it is for consideration whether it might not be advisable to alter item J.1 of the revised Loan programme to " European *and African* Government Staff Housing " and to increase the amount provided from £1,000,000 to £1,500,000. This would obviate the necessity which exists at present of having provision for building African Government Staff Quarters inserted at various points under Head 30 " Public Works Extraordinary "—where, it might be added, the first cuts in expenditure are inevitably made in the event of a slump.

201. In the same way it might also be advisable to increase the General Unallocated Balance of the revised Loan programme from £457,000 to £900,000 so as to have funds available to meet the almost certain calls of the European Education Department for a further £500,000 to meet that Department's proposed building programme (see paragraph 152).

202. The effect of these alterations would be to increase the loan to be raised from £8 million to £9 million; and to enlarge the scope of the Territory's Ten Year Development Plan from the original £13 million to £17 million. At the risk of labouring the obvious it is worth while saying again that whether or not the Territory has to raise a loan of this magnitude will depend, first on the continued receipt of large sums of income tax from the copper mining industry, and secondly upon the exercise of economy in the annual territorial budgets so that to the greatest extent possible Development may be financed out of annual surpluses.

203. Whether a Loan of £8 million or £9 million *can* be raised in the United Kingdom or elsewhere is, of course, another matter requiring early discussion with the authorities concerned both as to the size of the Loan and its incidence. From Northern Rhodesia's point of view it would be convenient to defer the raising of the Loan, if possible, until 1950 so as to coincide with the proposed conversion of the existing 1950/70 Loan.

204. *Colonial Development and Welfare Regional Allocation.* To complete the financial picture reference must be made to the above joint allocation between Northern Rhodesia and Nyasaland of £1 million. So far joint schemes have been proposed or approved amounting to approximately £400,000. (Mass Literacy; Central African Broadcasting; Central African Film Unit; Joint Publications Bureau; Fort Jameson–Salima Road.) No further joint schemes have presented themselves, or seem likely to do so, and it is therefore proposed, with the agreement of the Nyasaland Government, to approach the Secretary of State for the Colonies with a request that the unused balance of the allocation should be " split " between the two territories in proportions to be negotiated and mutually agreed. In this way a further sum of at least £300,000 should become available for development projects in Northern Rhodesia.

205. *Tailpiece.* In this rapidly changing world—where most things tend to become dearer or scarcer and most tasks more difficult—it is impossible to say that a given state of affairs will continue the same for a period of eight or ten years, that present-day prices are the limit, or that what is prescribed now for the Territory's benefit will suit the patient in ten years' time. Apart from annual revision another full-scale review of the Territory's Ten Year Development Plan will, alas, be necessary before the Plan itself is completed.

APPENDIX I.

DETAILS OF EXPENDITURE

HEAD AND SUB-HEAD	Period of Scheme	Estimated Total Cost	% of Cost Payable under C. D. and W. Act	Actual Expenditure to 31-12-47	Original Approved Estimate 1948	Revised Estimated Expenditure, 1948			Notes
						C. D. and W. Act	N.R. Development Account	Total	
		£		£	£	£	£	£	
HEAD 35.—DEVELOPMENT AND WELFARE SCHEMES.									
I—SOCIAL SERVICES.									
A.—Health.									
1. Extension of African Medical Education	1947-51	60,700	*100%	3,951	3,051	10,000	—	**10,000**	(1)
2. Additional African Urban Clinics	1947-55	4,500	*100%	—	500	900	—	**900**	(2)
3. Leprosy Centres	1947-49	13,000	*100%	140	1,500	1,500	—	**1,500**	(3)
4. Improved Hospital Facilities at Lusaka, Ndola and Kasama ...	1947-51	25,000	*100%	—	5,000	5,000	—	**5,000**	(4)
5. Medical and Public Health Facilities in Copperbelt Townships ...	1948-52	13,800	*100%	—	—	—	—	—	
6. Rural Hospitals and Dispensaries	1948-52	109,000	*100%	—	6,000	6,000	—	**6,000**	(5)
7. Additional Housing	1947-51	25,000	*100%	—	1,000	2,300	—	**2,300**	(6)
8. Hospital and Dispensaries—Feira	1947-49	15,600	*100%	—	15,600	1,000	—	**1,000**	(7)
9. Training of African Female Nurses and Male Sanitary Inspectors ...	1947-55	15,108	*100%	57	200	200	—	**200**	(8)
10. Recurrent Costs of Additional Rural Dispensaries and Mine Township Clinics	1948-55	165,300	*100%	—	—	600	—	**600**	(8a)
11. Recurrent Costs, Special Measures, Feira	1947-55	40,700	—	3,636	5,338	—	5,338	**5,338**	(9)
12. Central Leprosy Institution, Salary of Leprosy Worker and other Charges	1947-56	62,000	—	—	1,500	—	1,500	**1,500**	(10)
13. Recurrent Costs of Nutrition Survey	1947-49	9,000	—	3,237	4,000	—	4,000	**4,000**	(11)
14. Recurrent Costs of Items 2, 5, 7, above	1947-54	21,640	—	—	—	—	—	—	
Total Health	—	580,348	—	11,021	43,689	27,500	10,838	**38,338**	
B.—African Education.									
25. Additional Staff	1947-55	94,620	—	4,351	5,640	—	5,640	**5,640**	(12)
26. Area Team Staff	1947-55	68,200	—	669	3,868	—	3,868	**3,868**	(13)
27. Provincial Schools	1948-55	125,100	—	—	3,920	—	3,920	**3,920**	(14)
28. Barotse National School	1947-55	37,650	—	3,894	3,984	—	3,984	**3,984**	(15)
29. Jeanes School	1947-55	28,415	—	642	2,014	—	2,014	**2,014**	(16)
30. Secondary and Trades School ...	1947-55	27,320	—	2,105	2,530	—	2,530	**2,530**	(17)
31. Girls' Boarding School	1947-55	12,935	—	617	1,202	—	1,202	**1,202**	(18)
32. Government and Assisted Primary Schools	1947-55	283,500	—	2,489	7,786	—	7,786	**7,786**	(19)
33. Government School Buildings ...	1947-55	100,000	*100%	8,491	31,025	31,025	—	**31,025**	(20)
34. Building Grants to Missions ...	1947-55	122,500	*100%	8,988	11,417	11,417	—	**11,417**	(21)
35. Building Grants: Village Schools	1947-55	177,500	*100%	12,744	16,687	16,687	—	**16,687**	(22)
36. Special Expenditure: Provincial Schools	1947-55	43,500	*100%	6,000	6,000	6,000	—	**6,000**	(23)
37. Mass Literacy	1947-51	5,000	*100%	1,627	1,500	1,500	—	**1,500**	(24)
38. Grants: Scout and Guides Associations	1947-55	6,000	*100%	450	500	500	—	**500**	(25)
39. Equipment: Provision of School Meals	1948-52	24,000	*100%	—	3,000	3,000	—	**3,000**	(26)
Total African Education	—	1,156,240	—	52,617	101,073	70,129	30,944	**101,073**	

* Applications for grants from the Colonial Development and Welfare Fund have been or will be submitted in respect of the schemes so marked.

(1) Sanitary Inspectors' School and quarters for pupils.
(2) Fifty per cent. cost of additional Clinic—Wusikili.
(3) Quarters for patients; treatment rooms, etc.; quarters for African Staff.
(4) Provision of Isolation Block at Lusaka Hospital.
(5) Provision for 15 dispensaries.
(6) Quarters for Librarian Records Clerk, Lusaka. Expenditure on this item will depend on the availability of P.W.D. capacity.
(7) Provision reduced to £1,000, representing maximum capacity in 1948.
(8) Grant to Salvation Army Hospital.
(8a) Recurrent expenditure at Kitwe.
(9) *See* Appendix D1.
(10) European leprosy worker £450, African staff £100, transport £250. motor vehicle and camp equipment £700.
(11) *See* Appendix D2.
(12) *See* Appendix D3.
(13) *See* Appendix D4.
(14) *See* Appendix D5.
(15) *See* Appendix D6.
(16) *See* Appendix D7.
(17) *See* Appendix D8.
(18) *See* Appendix D9.
(19) *See* Appendix D10.
(20) Includes revotes. Provisiot. for school buildings, Baro... Province £275; Central Province £1,025; Eastern Provin... £360; Northern Province £1,775; Southern Province £12,64... Western Province £8,150; Jeanes School £3,700; Mun... School £3,100.
(21) *See* Appendix D11. £50,000 transferred from sub-head 3... revised application to be submitted to Secretary of State.
(22) *See* Appendix D12. Reduced by £50,000; *see* Note (21).
(23) Provision for establishment of second Provincial School... School £5,500, transport £500.
(24) Adult Education Officer £500; literature £500; buildin... and equipment £500.
(25) African Scouts £300; African Guides £200.
(26) Provision for establishment of kitchens for cooking scho... meals.

DETAILS OF EXPENDITURE

HEAD AND SUB-HEAD	Period of Scheme	Estimated Total Cost	% of Cost Payable under C. D. and W. Act.	Actual Expenditure to 31-12-47	Original Approved Estimate 1948	Revised Estimated Expenditure, 1948			Notes
						C. D. and W. Act.	N.R. Development Account	Total	
		£		£	£	£	£	£	
CIAL SERVICES *continued.*									
C.—Publications Bureau.									
45. Recurrent Expenditure	1947-55	50,000	*42%	686	5,605	2,354	3,251	**5,605**	(27)
46. Capital Expenditure	1947-49	5,900		631	2,300	—	2,300	**2,300**	(28)
47. Loan to Society undertaking distribution	1947-50	14,300		—	5,700	—	5,700	**5,700**	(29)
Total Publications Bureau	—	70,200	—	1,317	13,605	2,354	11,251	**13,605**	
Total Social Services	—	1,806,788	—	64,955	158,367	99,983	53,033	**153,016**	
II—ECONOMIC SERVICES.									
A.—Agriculture.									
50. Tobacco Adviser	1947-48	4,500	—	1,232	2,000	—	2,000	**2,000**	(30)
51. Research Service Recurrent ...	1948-55	36,000	*100%	—	2,000	2,000	—	**2,000**	(31)
52. Capital Equipment for Research Service	1948-49	10,000	*100%	—	8,100	8,100	—	**8,100**	(32)
53. Extension Services :									
(*a*) Field Operations	1948-55	425,000	*20%	—	13,180	—	3,000	**3,000**	(33)
(*b*) Training for Africans : Recurrent Expenditure ...	1948-55	—	20%	—	3,900	—	2,050	**2,050**	(33)
(*c*) Training for Africans : Capital Expenditure	1948-55	—	100%	—	5,200	10,400	—	**10,400**	(33)
54. Capital Works : Extension of Services for African Agriculture...	1948-55	131,000	*100%	—	16,900	11,800	—	**11,800**	(34)
55. Tobacco Experimental Station ...	—	—	—	—	12,000	—	22,500	**22,500**	(66)
56. Bush Clearing Unit and Agricultural Machinery Pool ...	—	25,000	—	—	—	—	25,000	**25,000**	(67)
Total Agriculture	—	631,500	—	1,232	63,280	32,300	54,550	**86,850**	
B.—Forestry.									
60. Forestry School	1948-55	17,000	*100%	—	—	1,500	—	**1,500**	(68)
61. Aerial Survey	1947-51	8,000	—	2,013	—	—	2,200	**2,200**	(69)
62. Forest Service in Rural Areas ...	—	†4,000	—	—	5,655	—	4,000	**4,000**	(35)
63. Utilisation and Timber Investigations	1948-55	†17,000	—	—	—	—	5,000	**5,000**	(38)
64. Capital Works for Forest Development	1947-54	55,000	—	1,372	13,000	—	26,000	**26,000**	(36)
65. Forest Development and Improvement	1947-55	95,000	—	1,884	4,266	—	7,500	**7,500**	(37)
66. Survey of Timber Resources ...	1949-55	40,000	100%	—	—	—	—	—	
67. Visits of Specialist Officers and Training of European Staff ...	1949-55	31,000	—	—	—	—	—	—	
Total Forestry	—	267,000	—	5,269	22,921	1,500	44,700	**46,200**	
C.—Veterinary.									
70. Additional Staff and Equipment	1947-55	260,000	—	1,966	8,661	—	8,661	**8,661**	(39)
71. Capital Works for Additional Staff	1947-51	33,000	—	2,431	16,350	—	33,000	**33,000**	(40)
72. Disease Eradication	1947-55	90,000	*100%	3,718	11,161	11,161	—	**11,161**	(41)
73. Livestock Improvement and Management	1947-55	80,000	*100%	1,000	4,100	4,100	—	**4,100**	(42)
74. African Veterinary Assistants' School	1947-55	29,000	*100%	3,941	3,532	3,532	—	**3,532**	(43)
Total Veterinary	—	492,000	—	13,056	43,804	18,793	41,661	**60,454**	

† Represents reduction of total cost as previously estimated.
‡ Revised estimate.

(27) *See* Appendix D. 13.

(28) Provision for African housing (£2,500); office equipment, duplicators, etc., (£350); rural bookshops (£3,000).

(29) Loan repayable over 15 years (free of interest) to enable non-profit-making Society to establish itself. Total scheme includes £8,000 for book stocks.

(30) Salary of (approved) Tobacco Adviser not exceeding £100 per month for 12 months (£1,200); travelling and transport of Tobacco Adviser (£800).

(31) Provision for agricultural chemist, entomologist and plant breeder. Token amount owing to improbability of obtaining all these officers in 1948.

(32) Housing at Lusaka and Wheat Station.

(33) Appendix D. 14 deleted and (*a*) token provision of £3,000 for field operations (Serenje) if staff becomes available, (*b*) £2,050 recurrent, and (*c*) £10,400 capital expenditure for Agricultural Training School at Monze.

(34) Staff houses at Serenje, Fort Jameson, Fort Rosebery (three at £2,000), African quarters and offices, £4,000; three vanettes, £1,800.

(35) *See* Appendix D. 15. Recurrent expenditure to be transferred

(36) Combines sub-heads 64 and 66 under new title: "Capital Works for Forest Department."

(37) Title changed from "Timber Production."

(38) Title replaces "Additional Headquarters and Research Staff." Provision (£5,000) for engagement of business manager, utilisation officer, silviculturist and one forester; vehicles and stores.

(39) *See* Appendix D. 17.

(40) Housing for additional staff and provision of £13,000 for electricity supply at Central Research Station.

(41) *See* Appendix D. 18.

(42) Purchase of stock; accommodation and fencing; construction of two ghee factories.

(43) *See* Appendix D. 19.

(66) Increased from £12,000 to provide capital (£19,000) and recurrent (£2,600) in 1948. Revenue earning after first year.

(67) New item for purchase of two D.8, one D.4 tractors and ancillary equipment and six maize pickers and six wheeled tractors.

(68) Token figure for immediate establishment of school originally postponed until 1949.

(69) Not approved as C.D. and W. scheme. £4,200 has already been spent as charge to territorial funds. Balance postponed

APPENDIX I.—*continued.*

DETAILS OF EXPENDITURE

HEAD AND SUB-HEAD	Period of Scheme	Estimated Total Cost	% of Cost Payable under C. D. and W. Act	Actual Expenditure to 31-12-47	Original Approved Estimate 1948	Revised Estimated Expenditure, 1948			Note
						C. D. and W. Act	N.R. Development Account	Total	
		£		£	£	£	£	£	
ECONOMIC SERVICES—*continued*									
D.—*Game and Tsetse Control*									
80. Tsetse Control Eastern Province (D595)	1945-49	21,750	*100%	3,290	9,827	9,827	—	**9,827**	(44)
81. Tsetse Control, Kafue Cattle Area (D595)	1945-49	26,910	*100%	3,202	13,355	13,355	—	**13,355**	(45)
82. Expansion of Departmental Services	1947-55	291,660	—	19,131	29,904	—	41,046	**41,046**	(46)
83. Fish Farming (D850)	1947-49	‡6,725	100%	—	5,435	5,245	—	**5,245**	(47)
84. Tsetse Control, Feira (D840) ...	1947-51	21,720	100%	4,211	7,516	7,516	—	**7,516**	(48)
Total Game and Tsetse Control	—	368,765	—	29,834	66,037	35,943	41,046	**76,989**	
Total—Economic Services	—	1,759,265	—	49,391	196,042	88,536	181,957	**270,493**	
III—RURAL DEVELOPMENT.									
90. Combined Training and Development Centre. Capital Works.	1948-55	91,000	*100%	—	22,500	18,000	—	**18,000**	(49)
91. Personal Emoluments ...	1949-55	138,960	—	—	—	—	900	**900**	
92. Other Charges	1949-55	167,040	*66⅔%	—	—	1,100	500	**1,600**	
93. Development Areas: Capital Works	1947-55	108,500	*100%	21,714	52,500	60,300	—	**60,300**	(50)
94. Development Areas: Recurrent Expenses	1947-55	650,000	*20%	3,139	60,000	6,400	25,600	**32,000**	(51)
95. Unallocated Stores: Purchases, £4,000; Issues, £2,770	1947-55	—	—	—	1,230	—	1,230	**1,230**	
96. Training Schools, African Rural Development Assistants ...	1948-55	19,000	*100%	—	1,500	—	—	—	(52)
97. Headquarters Staff	1947-55	15,000	—	729	1,400	—	1,300	**1,300**	(53)
98. Preliminary Development Work	1947-48	20,000	—	11,253	4,000	—	4,000	**4,000**	(54)
100. Expert Investigations	1947-55	10,000	*100%	—	1,000	1,000	—	**1,000**	(55)
Item not repeated	—	—	—	702	—	—	—	—	
Total Rural Development	—	1,219,500	—	37,537	144,130	86,800	33,530	**120,330**	
Total Social and Economic Services and Rural Development ...	—	4,785,553	—	151,883	498,539	275,319	268,520	**543,839**	
IV—COMMUNICATIONS.									
C.—*Posts, Telegraph and Telephone Development*:									
Scheme for linking District Headquarters by Radio:									
105. Capital Costs	1948-49	38,000	—	—	16,583	—	34,000	**34,000**	(56)
106. Recurrent Expenses	1948	3,600	—	—	3,599	—	3,600	**3,600**	(57)
107. Lusaka Telephone Exchange ...	1948-49	35,000	—	—	—	—	35,000	**35,000**	(57*a*)
Total Posts and Telegraphs	—	76,600	—	—	20,182	—	72,600	**72,600**	
V—WATER DEVELOPMENT.									
115. Water Supplies	1947-55	670,000	—	70,659	101,201	—	110,508	**110,508**	(58)
120. Irrigation	1947-55	300,000	—	930	7,400	—	33,000	**33,000**	(59)
Total Water Development	—	970,000	—	71,589	108,601	—	143,508	**143,508**	

(44) *See* Appendix D20.
(45) *See* Appendix D21.
(46) *See* Appendix D22.
(47) *See* Appendix D23.
(48) *See* Appendix D24.
(49) Reduced from £22,500 on revision of probable building capacity.
(50) *See* Appendix D25.
(51) Seven areas; *see* Appendix D26.
(52) Provision of £1,500 deleted as project cannot be started in 1948.
(53) Provision for Accountant, travelling allowances and transport.
(54) Seven development areas complete the development plan with capital expenditure under Sub-head 93 and recurrent expenditure under Sub-head 94. In 1948 6 areas will be functioning. This allocation is to permit of preliminary works in the remaining area (£4,000).
(55) For investigations approved by the Development Authority.
(56) New scheme replaces interim scheme (£16,583) originally provided. Provision for linking all districts with Provincial Headquarters by radio-telephone as well as telegraph.
(57) Recurrent provision for 1948 only. To be transferred to Departmental Vote in 1949.
(57*a*) New item; includes cost of building and all equipment.
(58) *See* Appendix D28.
(59) *See* Appendix D29.

APPENDIX I.—*continued*

DETAILS OF EXPENDITURE

HEAD AND SUB-HEAD	Period of Scheme	Estimated Total Cost	% of Cost Payable under C. D. and W. Act	Actual Expenditure to 31-12-47	Original Approved Estimate 1948	Revised Estimated Expenditure, 1948			Notes
						C. D. and W. Act	N.R. Development Account	Total	
VI—ECONOMIC DEVELOPMENT.				£	£		£	£	
130. Agricultural Development and Marketing, and Development of Secondary Industries	1947-55	500,000	—	39	5,000	—	5,000	**5,000**	(60)
Total—Communications, Water and Economic Development	—	1,546,600	—	71,628	133,783	—	221,108	**221,108**	
150. Unallocated	—	—	—	—	50,000	—	50,000	**50,000**	(61)
Total—Development and Welfare Schemes under Ten-year Plan	—	6,332,153	—	223,511	682,322	275,319	539,628	**814,947**	
MISCELLANEOUS SCHEMES:									
(Schemes Assisted by joint—N.R. and Nyasaland—or research allocations under the C.D. and W. Act.)									
Miscellaneous:									
151. Rhodes - Livingstone Institute (R31)	1945-48	21,200	100%	3,107	3,808	3,808	—	**3,808**	
152. Red Locust Control, Abercorn (D552A)	1946-48	46,050	100%	13,508	22,050	22,050	—	**22,050**	(62)
153. Central African Broadcasting Scheme (D793)	1947-55	214,100	—	4,578	93,044	90,794	2,250	**93,044**	(63)
154. Central African Film Unit ...	1947-52	58,740	—	524	8,415	6,394	1,311	**7,705**	
156. Rhodes - Livingstone Institute (R187)	—	10,000	100%	—	2,100	2,100	—	**2,100**	
Total Miscellaneous	—	350,090	—	21,717	129,417	125,146	3,561	**128,707**	

(60) Token figure.

(61) For allocation by Development Authority where necessary to maintain elasticity.

(62) Grant under Colonial Development and Welfare Act in respect of capital costs of Headquarter buildings at Abercorn.

(63) *See* Appendix D. 30; but scheme has been subsequently modified by Secretary of State regarding total amount of grant and incidence of cost, details of which have not yet been received.

APPENDIX II

LOAN PROGRAMME.

Programme Approved, 16/12/47 (1) Item	(2) Approved Allocation	(3) Item	Revised Programme—Approved June, 1948 (4) Revised Estimate of Planned Items	(5) Proposed Allocation for other Items	(6) Actual Expenditure 1947	(7) Approved Expenditure 1948	(8) Balance, 1/1/49
	£	"A" Health.	£	£	£	£	£
"A" Health.		1. Broken Hill Hospital	150,000	—	—	40,000	110,000
1. European Hospital, Broken Hill	40,000	2. Fort Rosebery Hospital	—	28,000	—	1,000	27,000
2. African Hospital, Broken Hill	30,000	3. Balovale Hospital	—	28,000	—	1,000	27,000
3. African Hospital, Fort Rosebery	20,000	4. Choma Hospital	—	21,000	—	14,000	7,000
4. African Hospital, Mazabuka	15,000	5. Entomological Laboratory	—	21,000	—	2,000	19,000
5. African Hospital, Choma	15,000		—	—	—	—	—
6. African Hospital, Balovale	20,000		—	—	—	—	—
7. European Hospital, Livingstone	40,000		—	—	—	—	—
8. African Hospital, Kaonde Lunda	28,500		—	—	—	—	—
9. African Hospital, Namwala	28,500		—	—	—	—	—
10. African Hospital, Mpika	28,500		—	—	—	—	—
11. African Hospital, Kalabo	20,000		—	—	—	—	—
12. Mental Hospital	20,000		—	—	—	—	—
13. Tuberculosis Hospital	15,000		—	—	—	—	—
14. Entomological Laboratory	10,000		—	—	—	—	—
15. Extension to African Hospital, Ndola	15,000		—	—	—	—	—
16. Extension to African Hospital, Fort Jameson ...	10,000	Balance for Allocation	—	252,000	—	—	252,000
17. Extension to African Hospital, Livingstone ...	14,000	Total Columns 4 and 5	150,000	350,000	—	—	—
Unallocated	398,000	Revised Total Health	500,000		—	58,000	442,000
Total Health							
"B" African Education.		"B" African Education.					
1. Transfer of Headquarters to Lusaka (1)	19,000	1. Secondary School	—	72,000	—	—	72,000
2. Secondary School Building	25,000	2. Technical School	12,000	—	—	10,000	2,000
3. Technical School Building	12,000		—	—	—	—	—
4. Staff Housing (2)	30,000	Total Columns 4 and 5	12,000	72,000	—	—	—
Total African Education	86,000	Revised Total African Education ...	84,000		—	10,000	74,000
"C" Agriculture.		"C" Agriculture.					
1. Transfer of Headquarters to Lusaka (3)	22,000	1. Soil Conservation	100,000		1,797	10,800	87,403
2. Staff Housing (4)	8,000	2. Aerial Survey	10,000		—	6,500	3,500
3. Soil Conservation	100,000		—		—	—	—
4. Aerial Survey	10,000		—		—	—	—
Total Agriculture	140,000	Revised Total Agriculture	110,000		1,797	17,300	90,903
	£	"D" Veterinary.	£	£	£	£	£
"D" Veterinary.							
1. Transfer of Headquarters to Lusaka (5)	15,000	Nil	—	—	—	—	—
2. Staff Housing (6)	3,000		—	—	—	—	—
Total Veterinary	18,000	Revised Total Veterinary	—	—	—	—	—

(3) Transferred to Item J. 7.

(5) Transferred to Item J. 7.

(2) Transferred to Item J. 1.

APPEND'X II—*continued.*

Programme Approved, 16/12/47 (1) Item	(2) Approved Allocation	(3) Item	Revised Programme— Approved June, 1948 (4) Revised Estimate of Planned Items	(5) Proposed Allocation for other Items	(6) Actual Expenditure 1947	(7) Approved Expenditure 1948	(8) Balance, 1/1/49
"E" Roads, Air and Water Transport.		"E" Roads, Air and Water Transport.					
1. Contribution to Capital of Central African Airways	175,000	1. Contribution to Capital of Central African Airways.	220,500	—	175,000	45,500	—
2. Bitumen Surfacing: Copperbelt Roads	86,000	2. Bitumen Surfacing: Copperbelt Roads ...	134,000	—	29,661	40,000	64,339
3. Bitumen Surfacing: Chirundu Road	77,500	3. Reconstruction: Lusaka–Chirundu	195,000	—	1,763	85,000	108,237
4. Roadmaking Plant and Equipment	76,000	4. Roadmaking Plant and Equipment	176,000	—	56,081	21,000	98,919
5. Roadmaking—Staff	22,000	5. Roadmaking—Staff (1)	—	15,000	4,388	10,000	612
6. Construction: Class II and III Roads	10,000	6. Construction: Class II, III and IV Roads ...	300,000	—	—	10,000	290,000
—	—	7. Bridges and Culverts	150,000	—	—	—	150,000
—	—	8. Bitumen: Other Roads	580,000	—	—	—	580,000
—	—	9. Investigations, Surveys and Designs	—	15,000	—	7,000	8,000
—	—	10. Inland Water Transport	—	50,000	—	—	50,000
Unallocated	703,500	11. Unallocated	—	14,500	—	—	14,500
		Total Columns 4 & 5 ...	1,755,500	94,500	—	—	—
Total—Roads, Etc.	1,150,000	Revised Total—Roads, Etc.	1,850,000		266,893	218,500	1,364,607
"F" Aerodromes.		"F" Aerodromes.					
1. Livingstone Airport	250,000	1. Livingstone Airport	643,000	—	44,329	310,000	288,671
Total—Aerodromes	350,000	Revised Total—Aerodromes	643,000	—	44,329	310,000	288,671
"G" Posts and Telegraphs.		"G" Posts and Telegraphs.					
1. Purchase of Equipment	50,000	1. Main Trunk Telephones: Line of Rail	104,000	—	—	80,000	24,000
—	—	2. Lusaka–Chirundu–Salisbury Trunk	35,000	—	—	35,000	—
Total Posts and Telegraphs	50,000	Revised Total Posts and Telegraphs...	139,000	—	—	115,000	24,000
"H" Urban African Housing.		"H" Urban African Housing.					
1. Staff and Equipment...	40,000	1. Staff and Equipment	40,000	—	2,362	10,175	27,463
2. Motor Vehicles	9,000	2. Motor Vehicles	9,000	—	3,361	—	5,639
3. Plant and Machinery...	15,000	3. Plant and Machinery	15,000	—	354	4,900	9,746
4. Construction	936,000	4. Construction	936,000	—	4,783	175,000	756,217
Total Urban African Housing	1,000,000	Revised Total Urban African Housing	1,000,000	—	10,860	190,075	799,065
"I" Loans to Local Authorities.		"I" Loans to Local Authorities.					
1. Loans	250,000	1. Loans	500,000	—	9,400	200,000	290,600
Total—Loans to Local Authorities	250,000	Revised Total—Loans to Local Authorities	500,000	—	9,400	200,000	290,600

Programme Approved, 16/12/47 (1)	(2)	Revised Programme—Approved June, 1948 (3)	(4)	(5)	(6)	(7)	(8)
Item	Approved Allocation	Item	Revised Estimate of Planned Items	Proposed Allocation for other Items	Actual Expenditure 1947	Approved Expenditure 1948	Balance, 1/1/49
"J" General Building Programme.		"J" General Building Programme.					
1. Transfer of High Court to Lusaka	87,300	1. Government Staff Housing (1)	1,000,000	500,000	1,463	[200,000	1,298,537
2. Transfer of N.R.P. Headquarters to Lusaka ...	85,000	2. P.W.D. Workshops	64,000	—	8,884	41,000	14,116
3. Transfer of Lands and Surveys Headquarters to Lusaka	33,750	3. Stores Department Buildings	—	50,000	264	10,000	39,736
4. Transfer of European Education Headquarters to Lusaka.	15,550	4. Silicosis Bureau	50,000	—	14,191	35,809	—
5. Transfer of Posts and Telegraphs Headquarters to Lusaka.	17,000	5. Police Camp: Wusukili	25,000	—	—	25,000	—
6. Prisons	123,000	6. Accommodation for Lunatics, Ndola	3,600	—	3,066	534	—
7. Staff Housing: Health Department	15,000	7. Transfer of Departments to Lusaka	—	500,000	—	27,500	472,500
8. Staff Housing - N.R.P.	4,000	8. Prisons	—	172,000	—	10,500	161,500
9. Staff Housing: Posts and Telegraphs	1,500	9. Aged Persons Home	—	14,000	—	—	14,000
10. Staff Housing: Prisons	18,500	10. Plant and Equipment	45,000	—	21,153	23,847	—
11. Staff Housing: P.W.D.	40,000	11. P.W.D. Staff (2)	—	27,000	4,766	22,060	174
12. Staff Housing: Provincial Administration ...	153,800	12. Lusaka Electricity and Water	112,000	—	48	111,952	—
13. Legislative Council Offices	15,000		—	—	—	—	—
14. Government Rest House, Lusaka	25,000		—	—	—	—	—
15. Aged Persons Home	10,000		—	—	—	—	—
16. P.W.D. Workshops	25,000		—	—	—	—	—
17. Stores Department Buildings	20,000		—	—	—	—	—
18. Silicosis Bureau	48,000		—	—	—	—	—
19. Police Camp, Mindolo	19,000		—	—	—	—	—
20. Accommodation for Lunatics, Ndola	3,000		—	—	—	—	—
21. P.W.D. Staff	255,000		—	—	—	—	—
22. Plant and Equipment	40,000	Unallocated	—	254,400	—	—	254,400
23. Lusaka Electricity and Water	80,000						
Unallocated	15,000	Total Columns 4 & 5 ...	1,299,600	1,517,400	—	—	—
Total—Buildings	1,150,000	Revised Total—Buildings	2,817,000		53,835	508,202	2,254,963
"K" European Education.		"K" European Education.					
1. Schools and Hostels	150,000	1. Hostels, Lusaka	150,000	—	2,632	70,000	77,368
2. Infants' School, Broken Hill	5,000	2. Boys' School, Lusaka	—	30,000	—	—	30,000
	—	3. Infants' School, Broken Hill	—	8,000	—	8,000	—
	—	4. Infants' School, Kitwe	—	13,000	—	13,000	—
Unallocated	245,000	Unallocated	—	199,000	—	—	199,000
	—	Total Columns 4 & 5 ...	150,000	250,000	—	—	—
Total—European Education	400,000	Revised Total—European Education ...	400,000		2,632	91,000	306,368

(1) Includes provision for European and African Staff quarters. See paras. 98 and 200.
(2) See para. 123, the recommendation in which was accepted.

APPENDIX II.—*continued.*

COMPARATIVE SUMMARY.

	Original Allocation	Approved Revised Allocation	Increase	Decrease	Approved Expenditure 1948
	£	£	£	£	£
"A" Health	398,000	500,000	102,000	—	58,000
"B" African Education	86,000	84,000	—	2,000	10,000
"C" Agriculture	140,000	110,000	—	30,000	17,300
"D" Veterinary	18,000	—	—	18,000	—
"E" Roads, Air and Water Transport ...	1,150,000	1,850,000	700,000	—	218,500
"F" Aerodromes	350,000	643,000	293,000	—	310,000
"G" Posts and Telegraphs	50,000	139,000	89,000	—	115,000
"H" Urban African Housing	1,000,000	1,000,000	—	—	190,075
"I" Loans to Local Authorities	250,000	500,000	250,000	—	200,000
"J" General Building Programme... ...	1,150,000	2,817,000	1,667,000	—	508,202
"K" European Education	400,000	400,000	—	—	91,000
Unallocated (1)	8,000	957,000	949,000	—	—
TOTAL	5,000,000	9,000,000	4,050,000	50,000	1,718,077

(1) Not less than £500,000 to be earmarked for European Education. *See* paragraphs 50 and 201, the recommendations in which were accepted.

APPENDIX III.

(REVISED) HOUSING SUMMARY, 1948. (*See* para. 97 Section 14 : Public Works.)

PLACE	Provincial Administration		Health		Public Works Department		Northern Rhodesia Police		European Education		African Education		Secretariat.		Local Government and African Housing		Judicial		Aviation		Labour		Customs		Water and Irrigation
	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.
Livingstone ...	2	1	2	9	3	1	—	—	—	1	1	—	—	—	—	—	—	—	15	—	—	—	2	3	—
Mazabuka ...	—	—	—	2	—	—	1	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Choma	—	—	2	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Monze	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gwembe ...	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lusaka	—	—	3	—	49	20	4	—	1	4	5	—	2	—	3	2	—	—	8	—	—	—	—	—	4
Fort Jameson ...	—	—	1	1	2	—	1	—	—	1	1	—	—	—	—	—	—	—	1	—	1	—	—	—	1
Kasama ...	—	—	—	—	4	—	1	—	—	—	—	—	—	—	—	—	1	—	15	—	—	—	—	—	—
Ndola	2	—	4	5	20	5	—	—	1	—	—	—	—	—	—	—	1	—	9	—	—	—	2	1	—
Luanshya ...	—	—	—	—	—	—	3	—	4	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Kitwe	—	—	6	2	—	—	7	—	9	2	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Balovale ...	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chingola ...	—	—	—	—	—	—	—	—	2	6	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—
Mufulira ...	—	—	—	—	1	—	1	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chirundu Road	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Broken Hill ...	—	—	—	—	1	—	—	—	2	—	1	—	→	—	—	—	—	—	—	—	—	—	1	—	—
Mongu	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—

PLACE	Forestry		Prisons		Printing		Survey		Co-operative		Game and Tsetse		Agriculture		Veterinary		Audit		Stores and Transport		Posts and Telegraphs		African Housing		Accountant General
	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.
Livingstone ...	2	—	2	—	—	—	2	—	—	—	—	—	1	—	1	—	1	—	1	6	4	—	—	—	—
Mazabuka ...	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Choma	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—
Monze	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
Gwembe ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lusaka	—	—	1	—	1	—	—	—	2	—	—	—	6	—	—	—	—	—	—	—	1	—	3	—	7
Fort Jameson ...	1	—	1	—	—	—	—	—	1	—	1	—	1	—	1	—	—	—	—	—	1	—	—	—	—
Kasama ...	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	1	—	—	—	—
Ndola	3	1	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	3	—	—	—	—
Luanshya ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Kitwe	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	2	—	—	—
Balovale ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chingola ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Mufulira ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chirundu Road	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Broken Hill ...	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
Mongu	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—

TOTALS	M.	S.
Livingstone	39	21
Mazabuka	6	2
Choma	4	—
Monze	2	—
Gwembe	1	—
Lusaka	102	26
Fort Jameson	15	3
Kasama	24	—
Ndola	47	12
Luanshya	8	6
Kitwe	29	6
Balovale	1	—
Chingola	5	6
Mufulira	6	—
Chirundu Road	1	—
Broken Hill	7	—
Mongu	3	—
TOTAL	300	82

APPENDIX IV.

Rural Development.

A. The Problem.

1. The African rural population consists of many tribes (most of them very small) scattered over a vast area of poor soils. In Fort Jameson, Mongu, Kalabo, Mazabuka and parts of Kawambwa and Luwingu the overall population varies between ten and twenty to the square mile but the average for the Territory is only five and in some districts (Solwezi, Kasempa, Mpika) it is under two.

2. These native areas possess one economic asset only: the sale of the labour of their man power, and at least fifty per cent. of able-bodied men are absent from their homes at any one time. Work in the villages is confined to growing foodstuffs on a subsistence level by traditional methods using axe or hoe. This emigration reduces still further the average density of population and the number of effective workers available for rural development. It also raises serious social problems on both the family and tribal levels.

B. Objectives and Policy.

3. Government has accepted the principles and policy outlined in paragraphs 148 to 176 and Appendix H of the Ten Year Development Plan for Northern Rhodesia. The aim of Rural Development is to build up stable rural communities wherever the quality of the soil and economic conditions permit. In Native Areas now the population concentrates on the struggle to grow enough food to survive. Men must leave their homes to earn money but the majority return periodically to help their women in the main struggle for subsistence. This is an unstable situation and cannot continue indefinitely: it also represents a shocking waste of man-power.

4. The logical development in rural areas is to enable the agriculturalist to grow his own food requirements and a considerable surplus for sale: that is, to make his living on the land. This surplus produce should feed the industrial labourer and his family and also the artisan trader or skilled worker who earns his living by serving the rural community. When settled communities are earning their living on the land, small market towns will appear containing the court house, churches, school, dispensary, market, trading stores, community centre, cinema for each parish, and each town will be the headquarters for rural industries of all kinds. The weaver, iron worker, artisan, butcher, baker and candlestick maker will tend to settle in the townships.

5. *Economic aspect of development.* The present instability of the rural communities is due to economic causes, and it is only by tackling the problem on an economic basis that some measure of stability can be restored. The first task is to show that an African can make a decent living in his home area, and the basis on which rural economy must be founded is agriculture.

6. *Agriculture.* When moderately prosperous communities can be established earning an income on the land, the way is open to all other aspects of rural development. Under existing conditions of shifting cultivation, when villages move up to ten miles in quest of new land required by traditional methods of cultivation it is not possible to start large scale plans for permanent houses and sanitation, nor can any plan for marketing produce or road construction be undertaken and the cost of social services such as health and education is far higher than it should be.

7. The first objective must be to achieve an agricultural revolution in limited areas by getting the maximum number of villagers in the shortest possible time to abandon cultivation by traditional implements on a subsistence level and to adopt improved methods with more efficient implements as a means of earning a decent economic living on the land.

8. *Foodstuffs.* From the point of view of rural development it is fortunate that the Territory is short of foodstuffs. The peasant farmer will be required to adopt entirely new methods of cultivation but he can be encouraged to grow on a commercial scale the crops familiar to him, and this simplifies the task before us. The plan for rural development requires rapid expansion of the peasant farming scheme, and the immediate food requirements of the Territory underline this need.

9. *Economic Crops.* But if the peasant farming scheme becomes popular the railway belt should, in due course, produce all the maize and pulses the industrial

areas need and the more remote districts will then lose the larger part of their market for maize. It is essential that a programme of research and experiment should start now to find economic crops of higher market value for peasant farmers in more remote areas when their maize market disappears.

10. *Marketing facilities.* The peasant farmers will group themselves in areas containing suitable soils, but the scheme will survive only if marketing facilities are provided. An adequate organisation must be built up to keep pace with the growth of peasant farming groups.

11. *Long term planning.* As the groups of peasant farm settlements become established and grow, the entire plan of Rural Development should be linked to this scheme. Marketing facilities, co-operatives, rural industries, housing schemes, water and road development and all rural development projects should be confined insofar as is practicable, to these farming areas.

C. PLANS.

12. The Territory can be divided into eleven ecological areas, each area being reasonably homogeneous both as regards soil types and its African inhabitants. These are called Development Areas, and in each one a suitable Administrative District has been selected to be the "Development District" of its "Development Area." Each Development District will contain a team of Administrative and Technical Officers balanced to serve the needs of the area. The team will be housed together in the Development District and work on a co-ordinated plan starting in the district but spreading outwards until the entire area is covered. The area team will work under the general direction of the Provincial team which consists of the senior technical officer of each department under the chairmanship of the Provincial Commissioner.

13. The Areas and Development Districts are :

(i) *Bemba Area* consisting of Kasama (Development District) Chinsali and parts of Mporokoso, Luwingu and Mpika Districts.

(ii) *Luapula-Bangweulu*—Fort Rosebery (Development District) Kawambwa and part Luwingu.

(iii) *Eastern Province*—Fort Jameson (Development District) Petauke, Lundazi.

(iv) *Serenje Area*—Serenje (Development District) Mkushi and part Mpika.

(v) *Ndola Area*—Solwezi (Development District) Ndola and Kasempa.

(vi) *North Western Area*—Manyinga (Development District) Balovale Mwinilunga.

(vii) *Southern Area*—Mazabuka (Development District) Livingstone, Gwembe, Lusaka.

(viii) *Central Area*—Mumbwa (Development District) Broken Hill, Namwala.

(ix) *North Barotse Area.*

(x) *South Barotse Area.*

(xi) *Abercorn Area*—Abercorn (Development District) Isoka and part Mporokoso.

14. *Co-operation with Native Authorities.* The Area Teams will work on the principles and policy given in Appendix H of the "Ten Year Development Plan." In brief their text is to help the African to help himself and to build up a solid foundation for future progress when the ten year period has passed. The key to the whole problem is a correct development technique : with it and suitable staff any reasonable project can be undertaken with success, without it we shall waste a lot of money and on balance be worse off than when we started.

D. DETAILS OF THE PEASANT FARMING SCHEME.

15. *Objectives.* As has been indicated in paragraph 5 the fundamental problem is economic and the economic problem is nine tenths an agricultural one. There is no easy solution. The peasant farming scheme proposed must :

(i) Anchor the African to the land.

(ii) Provide a means of earning an income on the land instead of merely extracting his own food requirements from it.

(iii) Get concentrations of population in suitable localities.

(iv) Improve agricultural practice and soil conservation.

(v) Take advantage of (i) and (ii) and (iii) in a full scale plan of balanced development in due course.

16. The peasant farmer will grow traditional foodstuffs because he knows how to grow them and because the Territory requires them. By the time saturation point has been reached the farming practice should be familiar to him and he can then learn to grow other crops of higher market value.

17. *Limits of the farming scheme—Cattle.* Improved farming requires cattle to pull the implements and to provide compost but there are few districts with sufficient cattle to permit adoption of the scheme on a large scale. The urgent need to increase the number of cattle in the Territory has been stressed in the Review.

18. *Limits of the farming scheme—Tsetse.* Vast areas of the Territory are infested with tsetse fly. Every effort must be made to drive the fly out of areas suitable for permanent settlement and the programme of fly eradication should be confined insofar as is practicable to clearing these areas first.

19. *General pattern of peasant farming.* Wherever suitable soils can be found in fly free areas and cattle are (or can be made) available peasant farm groups should be established. They must be in groups because (i) the entire plan of rural development requires concentration of population (ii) it will permit economic use of implements (iii) it will simplify marketing.

20. The Department of Agriculture will determine the size of garden each peasant farmer requires and can work efficiently with his family; this will probably be 30–40 acres permitting 10–20 acres cultivation in any one season and the rest fallow. Land will be held under traditional land tenure. The Department will also establish a simple crop rotation with composting which peasant farmers will follow. It will stipulate the minimum soil conservation measures required—these will probably vary in different areas according to soil type and the slope of the land.

21. At present the normal minimum number of peasant farmers required per group is ten but experience may show that the number can be decreased in the first instance. In due course the peasant farmers should be concentrated up to the maximum carrying capacity of the land. There are many reasons why this policy should be adopted.

22. Volunteer peasant farmers will be required to observe the minimum requirements of improved farming and to learn to care for livestock. In return each group of ten will be provided with a set of simple implements which might be:

2 single furrow ploughs 10 in. blade.
1 or 2 single furrow ploughs 8 in. blade.
1 ridging plough (on suitable soils).
1 or 2 cultivators.
1 harrow.
1 planter.
1 cart.
Trek chains, manure forks etc.

23. These implements will be used by the group collectively and spreading of compost will be a communal responsibility. The gardens will, however, be individually owned and each farmer will harvest and sell his own crop.

24. The social grouping of each unit will be left entirely to the Native Authority: it may be in family groups or with unrelated individuals according to tribal preferences.

25. The peasant farmers will be charged an annual rental for the use of implements levied equally on each member of the group and paid when the crop is sold. The group will also be encouraged to establish a fund for repair and replacement of implements.

26. When a group is established it will also receive (if it wants them) a hand mill to grind maize, a hand sheller for maize and groundnuts and the like. This will lessen the time wasted (especially by women) in routine work and enable them to give more time to food production.

27. In areas which lack cattle these must be provided by Government. Each group will receive approximately forty cows and twelve oxen which remain Government property and must be herded and kraaled to the satisfaction of the Veterinary Department. After 5–8 years Government will take back cattle in quality and age equal to the original grant and split the increase with the group—possibly in the proportion of one quarter to Government and three quarters to the farmers. The cattle recalled will be used to establish another group of farmers and the cattle left become the property of the farmers to be distributed as they choose.

28. In cattle owning areas the farm group will make its own arrangements.

29. *Co-operatives.* Once farm groups are established and their working fully understood, their expansion into co-operatives will be encouraged and Government's function will gradually be limited to supervision of agricultural and veterinary practice. The co-operatives can attend to marketing of produce and to raising loans for improved farming on the security of their economic crop.

D. PROGRAMME FOR 1948.

30. Two farm blocks (each of ten peasant farmers) will be established in

Mazabuka,
Namwala (?)
Serenje,
Isoka,
Abercorn,
Fort Jameson,
Petauke.

In these districts the District Commissioner in consultation with Agricultural staff will determine the most suitable Native Authority areas in which to start, bearing in mind :

(*a*) the quality of the Native Authority and its willingness to co-operate ;
(*b*) soil ;
(*c*) absence of tsetse fly ;
(*d*) communications ;
(*e*) ease of supervision ;
(*f*) possibilities for irrigation.

31. Agricultural staff should record :

(*a*) the size of holding required per family ;
(*b*) the soil conservation works necessary ;
(*c*) the proportion of cultivation to fallow ;
(*d*) the division of fields and suitable crop rotation ;
(*e*) the proportion of land to be composted annually ;
(*f*) general farm layout.

32. The peasant farmers will be required to build themselves temporary quarters and to proceed with training oxen. District Officers will collect timber for carts (wheels and axles will be supplied) and will receive equipment for each farm unit. Agricultural staff will supervise the initial ploughing and instruct farmers in the use of implements and the making and spreading of compost. Constant supervision will be necessary during the early rains when final ploughing will be followed by planting and the use of the cultivator. In addition to farm implements each unit will be supplied with a grinding mill and other tools mentioned in paragraph 25.

33. The main purpose of the 1948/49 programme is to demonstrate on the ground the economic possibilities of peasant farming. If this is successful there should be no lack of volunteers in 1949/50 season when a considerable expansion will be required.

J. S. MOFFAT,
Commissioner for Native Development.

19th May, 1948.

APPENDIX V.

Memorandum by Director of Public Works and Director of Civil Aviation Regarding the Livingstone Airport.

1. The terms of reference and the report of the committee appointed to make recommendations on the proposal to construct an aerodrome at Livingstone were as follows :

> To determine the minimum standard of construction which it would be necessary to adopt for the new Airport at Livingstone in order to meet in full the probable demands of *tourist traffic*, taking into account the maximum weight of the aircraft for which, in the opinion of the Committee, the Airport would be required to cater, and to advise whether construction should be to that standard or to a lower standard having regard to the probable cost and to the financial benefits which might reasonably be expected to accrue to the Territory from the development of tourist traffic.

The specification they recommended is as follows :

> An airport capable of taking aircraft of 150,000 lb. all-up weight with main runway and two subsidieary runways of lower standard together with necessary hardstanding, airport lighting, hangar and the necessary minimum buildings to work the airport services at a cost not to exceed £250,000.

2. In April, 1946, the Director of Public Works provided a tentative estimate of cost for this specification and gave the opinion that a sum of the order of £300,000 would probably be required. At the time field investigations were incomplete and design details were only in the initial stanges.

3. In the Loan Expenditure programme for 1948, approved by Legislative Council in December, 1947, the sum of £350,000 is provided for this purpose.

4. The design prepared to cover the specification as recommended by the Committee was referred to the Ministry of Civil Avaition. The Ministry drew attention to the fact that the proposed length of main runway (7,500 ft.) was not sufficient for I.C.A.O. standard class B which at this temperature and pressure should be 9,000 feet. However, His Excellency informed the Secretary of State that it had been decided to keep to the dimensions originally decided upon, i.e. 7,500 feet, with 500 feet graded grass over-run at each end. Previous to this date the width of the main runway paved strip had been increased from 150 feet as originally designed to 200 feet, in view of the fact that any future widening of the runway necessitated by I.C.A.O. standards would necessitate greatly increased expense once the contact lighting had been installed to suit the original width of 150 feet.

5. The revised estimate of cost of the specification as finally decided upon in accordance with the Ministry's recommendations is made up as follows, as at this date :

	£
(1) Main runway, hardstanding, connecting way, drainage, grass planting on graded sides of runway, water supply from Zambesi	293,250
(2) Terminal building, stage 1, including furniture, architectural and survey fees	45,000
(3) Hangar, purchase, transport from South Africa, erection on site	31,000
(4) Airfield lighting for runway and buildings, power for aeradio services including transmission from town supply and auxiliary standby plant and telephones	24,000
(5) Staff accommodation, subsidiary buildings, labour camp ...	22,300
(6) Approach road from Livingstone	10,000
(7) Departmental salaries,. transport of personnel and plant, sundry works and services and contingencies and contractor's management fee	177,000
	£602,550
Say	£603,000

6. The original estimate included the cost of two subsidiary runways to a lower standard than the main runway. It was envisaged that these would be constructed as a stage development after the main runway had been in use for a period, to establish the necessity and urgency for them. The study of the wind rose shows

that the wind blows normally at a speed of ten to fifteen miles per hour for 80 per cent. of the time down the main runway and the remaining 20 per cent. of the time at twelve to seventeen miles per hour from the South East or South West. At these times smaller aircraft would have difficulty in taking off and landing on the main runway although heavier aircraft, which would normally use the main runway, would hardly be affected. Thus the secondary runways would not need to be constructed to carry aircraft of more than 40,000 lb. all-up weight and their length should not be less than 4,800 feet and width 90 feet. In view of the fact that the contractors have on site the necessary plant and organisation it would, in the long run, be cheaper to construct the subsidiary runways as a continuation of the present work. The provisional estimate for these, if constructed now, is approximately £40,000 each, making the total cost of stages 1 and 2 of the original project £683,000.

7. Since the original plan was conceived the Director of Civil Aviation considers that should large internationally operated aircraft, for which the main runway is designed, use the airport it would be technically sound to provide one parallel taxi track on the north side of the main runway connecting the ends of the main and subsidiary runways to the hardstanding and hangar, and that this should be a higher priority than the subsidiary runways, which may also be required, if the airport is to serve its purpose as the main port of entry into Southern Africa and attract all types of aircraft. The provisional estimate for this parallel taxi track, if constructed now, is £110,000.

8. Stage 1 of the terminal building is designed to allow for extension whilst in use and incorporates the most modern methods for handling passengers, freight and mail, with customs and immigration and sanitary control. Should the major trunk route airlines, charter services and feeder lines use the airport as is hoped extension of this building to meet the added traffic flow will be required. No estimate has yet been made for extension beyond stage 1, but it is considered that the cost would be about £37,000.

9. The total cost of the entire project carried to completion would therefore be :

	£
Stage 1 :	
Main runway, terminal building, etc.	603,000
Stage 2 :	
Two subsidiary runways	80,000
Parallel taxi track	110,000
Completion of terminal facilities	37,000
	£830,000

10. As previously mentioned the original tentative estimate was prepared before field investigations were complete and design details were only in the initial stages. In general the rates allowed were insufficient for contract work and the many aspects of the construction were not foreseen and allowed for owing to inexperience in this type of work. As investigations and planning proceeded these became apparent and have had to be included in the work. The following are some of the chief reasons for the increase in the estimate.

(1) The increase in width of the main runway from 150 feet to 200 feet, equal to 375,000 square feet increase in paving.

(2) Increase in size of hardstanding by approximately 11 per cent. As originally planned this would have been inadequate for the size of aircraft which the runway was designed to carry in the frequency of operation that will come about if trunk route, feeder and charter services materialise.

(3) The recommendation of the Ministry to put down a premix bitumen surface to the main runway in preference to a grouted surface as originally planned, on the grounds of more satisfactory construction and reduction of subsequent maintenance costs.

(4) The size of the terminal building as originally conceived would have been inadequate to meet requirements. Accommodation allowed for operational staff on the airport was two houses only, the remainder being accommodated in the town. In view of the fact that civil avaiation services now have to be on a 24-hour basis it has been necessary to increase the number of houses to seventeen.

(5) The general increase in the cost of materials and labour.

(6) The cost of transport and hire of plant and fees under the contract.

(7) Customs duty on plant, materials and equipment imported by the contractor.

A. L. Simpkins,
Director of Public Works.
M. J. Muspratt-Williams,
Director of Civil Aviation.

11th May, 1948.

APPENDIX D1.

Head 35.—Development and Welfare Schemes: Sub-head 11, Recurrent Costs of Special Measures at Feira

Establishment, 1946	Establishment, 1947	Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Estimate, 1948
				£	£	£	£
			PERSONAL EMOLUMENTS.				
—	1	1	1. Medical Officer at £600; £630 × 30 — 840 × 40— 1,000	—	400	—	750
—	1	2	Medical Inspector at £300 × 15—390 × 30—450 × 15— 480 × 15—600	—	550	260	810
—	—	—	Cost of Living Allowances	—	—	103	462
			African Staff:				
—	10	10	Graded	—	211	133	273
—	4	14	Ungraded	—		113	249
—	—	10	Unskilled	—	116	88	60
—	—	—	Cost of Living	—	—	46	204
			Total Personal Emoluments	—	1,277	743	2,808
			OTHER CHARGES.				
—	—	—	2. Travelling Allowances ...	—	32	84	196
—	—	—	3. Travelling on Leave ...	—	20	20	—
—	—	—	4. Transport—General ...	—	643	250	1,040
—	—	—	5. African Staff—Rations ...	—	68	54	167
—	—	—	6. African Staff—Uniforms ...	—	32	32	64
—	—	—	7. Office Expenses and Sundries	—	2	2	5
—	—	—	8. Hospital Provisions ...	—	365	100	273
—	—	—	9. Upkeep of Hospitals and Dispensaries	—	590	100	485
—	—	—	10. Drugs, Instruments and Equipment	—	500	200	—
—	—	—	11. Temporary Buildings ...	—	20	1,114	—
—	—	—	12. Mosquito Control	—	350	150	50
—	—	—	13. Transport of Patients ...	—	50	—	—
—	—	—	14. Camp Equipment Replacements	—	—	—	20
			Total Other Charges	—	2,672	2,106	2,300
			SPECIAL EXPENDITURE.				
—	—	—	15. Office Furniture and Equipment	—	77	77	100
—	—	—	16. Typewriter	—	30	30	—
—	—	—	17. Motor Vehicle and Barge ...	—	450	1,500	—
—	—	—	18. Camp Equipment	—	10	60	130
—	—	—	19. Refrigerator	—	120	120	—
			Total Special Expenditure	—	687	1,787	230
			Total—Sub-head 11	—	4,636	4,636	5,338

APPENDIX D2.

Head 35.—Development and Welfare Schemes: Sub-head 13, Recurrent Costs of Nutrition Survey.

Establishment, 1946	Establishment, 1947	Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Estimate, 1948
				£	£	£	£
			PERSONAL EMOLUMENTS.				
			African Staff:				
—	—	2	1. African Drivers	—	90	—	100
—	—	2	Interpreter-Clerks	—	90	—	90
—	—	1	Dispensary Assistant ...	—	—	—	36
—	—	1	Dresser	—	—	—	18
—	—	—	Cost of Living Allowances	—	27	—	36
			Total Personal Emoluments	—	207	—	280
			OTHER CHARGES.				
—	—	—	2. Travelling Allowances ...	—	50	—	150
—	—	—	4. Transport—General ...	—	600	—	750
—	—	—	5. African Staff—Rations ...	—	27	—	100
—	—	—	6. African Staff—Uniforms ...	—	13	—	15
—	—	—	7. Office Expenses and Sundries	—	10	—	10
—	—	—	8. Hospital Provisions ...	—	540	—	800
—	—	—	9. Upkeep of Hospitals and Dispensaries	—	—	—	20
—	—	—	10. Drugs, Instruments and Equipment	—	200	—	400
—	—	—	11. Minor Survey	—	150	—	—
—	—	—	12. Temporary Buildings ...	—	—	—	45
—	—	—	13. Camp Equipment Replacements	—	—	—	100
			Total Other Charges	—	1,590	—	2,390
			SPECIAL EXPENDITURE.				
—	—	—	14. Temporary Buildings ...	—	600	—	200
—	—	—	15. Typewriters...	—	30	—	30
—	—	—	16. Motor Vehicles	—	1,070	—	1,000
—	—	—	17. Camp Equipment	—	240	—	100
—	—	—	18. Refrigerators	—	150	—	—
			Total Special Expenditure	—	2,090	—	1,330
			Total—Sub-head 13	—	3,887	2,000	4,000

APPENDIX D3.

Head 35.—Development and Welfare Schemes: Sub-head 25, Additional Staff for African Education Department.

Establishment, 1946	Establishment, 1947	Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Estimate, 1948	
				£	£	£	£	
			PERSONAL EMOLUMENTS.					
—	1	1	1. Deputy Director	—	1,100	—	—	(1)
—	1	1	Assistant Accountant ...	—	440	440	500	
—	4	4	Education Officers, £350; £400×50—500; £500×25—600×30—840 ...	—	1,000	500	1,600	
—	1	1	Industrial Instructor ...	—	315	200	300	
—	—	—	Cost of Living Allowances	—	—	200	500	
—			*Total Personal Emoluments*	—	2,855	1,340	2,900	
			OTHER CHARGES.					
—	—	—	2. Travelling Allowances ...	—	150	150	400	
—	—	—	3. Travelling on Leave ...	—	—	—	200	
—	—	—	4. Transport—General ...	—	950	750	900	
			Total Other Charges	—	1,100	900	1,500	
			SPECIAL EXPENDITURE.					
—	—	—	8. Motor Vehicles	—	1,000	1,000	1,200	
—	—	—	9. Typewriters...	—	40	40	40	
			Total Special Expenditure	—	1,040	1,040	1,240	
			Total—Sub-head 25	—	4,995	3,280	5,640	

(1) Transferred to departmental vote: *see* Head 7.

APPENDIX D4.

Head 35.—Development and Welfare Schemes: Sub-head 26, Area Team Staff for African Education Department.

Establishment, 1946	Establishment, 1947	Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Estimate, 1948	
				£	£	£	£	
			PERSONAL EMOLUMENTS.					
—	2	2	1. Education Officers, £350; £400×50—500×25—600; £660×30—840	—	500	300	1,000	
—	1	1	Woman Education Officer, £390×18—480×20—600	—	200	200	408	
—	—	—	Cost of Living Allowances	—	—	40	300	
			Total Personal Emoluments	—	700	540	1,708	
			OTHER CHARGES.					
—	—	—	2. Travelling Allowances ...	—	65	25	300	
—	—	—	3. Travelling on Leave ...	—	—	—	—	
—	—	—	4. Transport—General ...	—	475	275	800	
			Total Other Charges	—	540	300	1,100	
			SPECIAL EXPENDITURE.					
—	—	—	8. Motor Vehicles	—	1,000	1,000	1,000	
—	—	—	9. Typewriters...	—	60	60	60	
			Total Special Expenditure	—	1,060	1,060	1,060	
			Total—Sub-head 26	—	2,300	1,900	3,868	(1)

(1) Provision for 1947 was in respect of 6 months only.

APPENDIX D5.

Head 35.—Development and Welfare Schemes: Sub-head 27, Provincial Schools.

Establishment, 1946	Establishment, 1947	Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Estimate, 1948	
				£	£	£	£	
			PERSONAL EMOLUMENTS.					
—	—	1	1. European Headmaster ...	—	—	—	600	
—	—	8	African Teachers and Instructors	—	—	—	600	
—	—	—	Cost of Living Allowances	—	—	—	175	
			Total Personal Emoluments	—	—	—	1,375	
			OTHER CHARGES.					
—	—	—	2. Travelling Allowances ...	—	—	—	20	
			3. Travelling on Leave ...	—	—	—	—	
—	—	—	4. Transport—General ...	—	—	—	200	
—	—	—	5. African Staff—Rations ...	—	—	—	100	
—	—	—	6. African Staff—Uniforms ...	—	—	—	50	
—	—	—	7. Maintenance of Schools ...	—	—	—	2,000	
—	—	—	8. Transport of Students ...	—	—	—	75	
—	—	—	9. Tax of Pupils	—	—	—	75	
—	—	—	10. Labour	—	—	—	25	
			Total Other Charges	—	—	—	2,545	
			Total—Sub-head 27	—	—	—	3,920	(1)

(1) It is proposed that this school, which is the second of the programme, shall be built in the Eastern Province.

APPENDIX D6.

Head 35.—Development and Welfare Schemes: Sub-head 28, Barotse National School.

Establishment, 1946	Establishment, 1947	Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Estimate, 1948
				£	£	£	£
			PERSONAL EMOLUMENTS.				
—	21	21	1. African Teachers and Instructors	—	1,100	1,100	1,248
	1	1	Clerk	—	75	75	80
—	5	5	Ungraded Staff	—	90	90	108
—	—	—	Cost of Living Allowances	—	—	150	162
			Total Personal Emoluments	—	1,265	1,415	1,598
			OTHER CHARGES.				
—	—	—	3. Travelling on Leave ...	—	90	40	90
—	—	—	5. African Staff—Rations ...	—	50	50	72
—	—	—	6. African Staff—Uniforms ...	—	45	45	105
—	—	—	7. Maintenance of Schools ...	—	1,735	1,635	1,860
—	—	—	8. Tax of Pupils	—	5	5	5
—	—	—	9. Labour	—	195	195	254
			Total Other Charges	—	2,120	1,970	2,386
			Total—Sub-head 28	—	3,385	3,385	3,984

APPENDIX D7.

Head 35.—Development and Welfare Schemes: Sub-head 29, Jeanes School.

Establishment, 1946	Establishment, 1947	Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Estimate, 1948
				£	£	£	£
			PERSONAL EMOLUMENTS.				
—	1	1	1. Education Officer	—	250	150	500
—	1	1	African Clerk	—	42	42	45
—	—	1	Ungraded Staff	—	—	—	24
—	—	—	Cost of Living Allowances	—	—	5	12
			Total Personal Emoluments	—	292	197	581
			OTHER CHARGES.				
—	—	—	2. Travelling Allowances ...	—	—	—	30
—	—	—	3. Travelling on Leave ...	—	—	—	50
—	—	—	4. Transport—General ...	—	250	250	230
—	—	—	5. African Staff—Rations ...	—	—	—	15
—	—	—	6. African Staff—Uniforms ...	—	—	—	8
—	—	—	7. Maintenance of Schools ...	—	335	330	600
—	—	—	8. Transport of Pupils ...	—	60	60	120
—	—	—	9. Tax of Pupils	—	20	20	20
	—	—	10. Labour	—	60	60	60
			Total Other Charges	—	725	720	1,133
			SPECIAL EQUIPMENT.				
—	—	—	11. Laboratory Equipment ...	—	300	300	300
			Total Special Equipment	—	300	300	300
			Total—Sub-head 29	—	1,317	1,217	2,014

APPENDIX D8.

Head 35.—Development and Welfare Schemes: Sub-head 30, Secondary and Trades School.

Establishment, 1946	Establishment, 1947	Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Estimate, 1948
				£	£	£	£
			PERSONAL EMOLUMENTS.				
—	2	2	1. African Teachers and Instructors	—	115	115	520
—	—	—	Cost of Living Allowances	—	—	10	12
			Total Personal Emoluments	—	115	125	532
			OTHER CHARGES.				
			2. Travelling Allowances ...	—	—	—	15
—	—	—	3. Travelling on Leave ...	—	—	—	—
—	—	—	4. Transport—General ...	—	—	—	100
—	—	—	6. African Staff—Uniforms ...	—	5	5	8
—	—	—	7. Maintenance of Schools ...	—	1,225	1,215	1,260
—	—	—	8. Transport of Pupils ...	—	100	100	150
—	—	—	*Total Other Charges*	—	1,330	1,320	1,533
			SPECIAL EXPENDITURE.				
			9. Typewriters...	—	40	40	65
—	—	—	10. Industrial Plant	—	400	400	400
—	—	—	*Total Special Expenditure*	—	440	440	465
			Total—Sub-head 30	—	1,885	1,885	2,530

APPENDIX D9.

Head 35.—Development and Welfare Schemes: Sub-head 31, Girls' Boarding School.

Establishment, 1946	Establishment, 1947	Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Estimate, 1948
				£	£	£	£
			PERSONAL EMOLUMENTS.				
—	1	1	1. Woman Education Officer, £390×18—480×20—600	—	200	200	400
				—	—	—	30
—	—	1	African Teachers	—	42	42	45
—	1	1	African Clerk	—	—	—	10
—	—	1	Ungraded Staff	—	—	50	120
—	—	—	Cost of Living Allowances	—			
			Total Personal Emoluments	—	242	292	605
			OTHER CHARGES.				
			2. Travelling Allowances ...	—	—	—	15
—	—	—	3. Travelling on Leave ...	—	—	—	—
—	—	—	4. Transport—General ...	—	100	100	50
—	—	—	5. African Staff—Rations ...	—	—	—	20
—	—	—	6. African Staff—Uniforms ...	—	—	—	12
—	—	—	7. Maintenance of Schools ...	—	450	400	500
—	—	—	8. Transport of Pupils ...	—	—	—	—
—	—	—	9. Labour	—	—	—	—
—	—	—	*Total Other Charges*	—	550	500	597
			Total—Sub-head 31	—	792	792	1,202

(1) 1947 provision was for 6 months only.

APPENDIX D10.

Head 35.—Development and Welfare Schemes: Sub-head 32, Government and Assisted Primary Schools.

Establishment, 1946	Establishment, 1947	Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Estimate, 1948	
				£	£	£	£	
			PERSONAL EMOLUMENTS.					
—	92	92	1. African Teachers and Instructors	—	2,735	2,735	3,000	
—	—	—	Cost of Living Allowances	—	—	250	552	
			Total Personal Emoluments	—	2,735	[illegible]	3,552	
			OTHER CHARGES.					
—	—	—	5. African Staff—Rations ...	—	434	434	434	
—	—	—	6. African Staff—Uniforms ...	—	254	254	300	
—	—	—	9. Grants for Educational Work	—	1,370	1,020	3,500	(1)
			Total Other Charges	—	2,058	1,708	4,234	
			Total—Sub-head 32	—	4,793	4,693	7,786	

(1) Grants in respect of 120 graded and 70 junior teachers.

APPENDIX D11.

Head 35.—Development and Welfare Schemes: Sub-head 34, Building Grants to Missions.

£ FOR £ GRANTS TO MISSIONS:	£	£	£
Barotse Province:			
Paris Mission	420		
Capuchin Fathers	440		
		860	
Central Province:			
Methodist Mission	1,790		
Jesuit Fathers	360		
		2,150	
Eastern Province:			
White Fathers	265		
Dutch Reformed Church	620		
		885	
Northern Province:			
White Fathers (Bangweulu)	177		
London Missionary Society	215		
White Fathers (Luangwa)	240		
Church of Scotland	1,130		
Senga Agricultural School	320		
		2,082	
Southern Province:			
Seventh Day Adventists	465		
Universities Mission in Central Africa	115		
Pilgrim Holiness	153		
Paris Missionary Society	345		
Church of Christ	690		
Brethren in Christ	140		
		1,908	
Western Province:			
Christian Missions in Many Lands	810		
South African Baptists	280		
South African General Mission	750		
Franciscan Fathers	740		
White Fathers	167		
Seventh Day Adventists	140		
Universities Mission in Central Africa	390		
London Missionary Society	255		
		3,532	
Total—Sub-head 34 ...			**£11,417**

APPENDIX D12.

Head 35.—Development and Welfare Schemes: Sub-head 35, Building Grants for Village Schools.

	Estimated Cost of Buildings £	*Grant* £
Barotse Province	2,180	1,667
Central Province	2,660	2,640
Eastern Province	2,890	1,695
Northern Province	4,015	4,015
Southern Province	2,260	2,260
Western Province	5,140	4,410
Total—Sub-head 35 ...		**£16,876**

APPENDIX D13.

Head 35.—Development and Welfare Schemes: Sub-head 45, Publications Bureau.

Establishment, 1946	Establishment, 1947	Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Estimate, 1948
				£	£	£	£
			PERSONAL EMOLUMENTS.				
—	1	1	1. Director	—	920	294	894
—	1	1	Secretary (Editorial and Business)	—	300	117	350
—	1	—	African Clerk	—	100	26	—
—	4	4	Readers	—	200	100	660
—	12	10	Translators	—	500	160	582
—	1	1	Orderly	—	—	4	16
—	—	—	Cost of Living Allowances	—	—	80	298
			Total Personal Emoluments	—	2,020	781	2,800
			OTHER CHARGES.				
—	—	—	3. Fees: Language Experts	—	400	100	300
—	—	—	4. Travelling Allowances—Staff	—	1,000	21	54
—	—	—	5. Travelling on Leave ...	—		—	150
—	—	—	6. Transport—General ...	—		142	374
—	—	—	7. African Staff—Rations ...	—		10	76
—	—	—	8. African Staff—Uniforms ...	—		10	70
—	—	—	9. Committees Travelling, etc.	—		15	63
—	—	—	10. Editorial Materials, etc. ...	—		30	103
—	—	—	11. Contingencies	—	240	—	—
—	—	—	12. Publications Revolving Fund	—	1,500	1,500	1,615
			Total Other Charges	—	3,140	1,828	2,805
			Total—Sub-head 45	—	5,160	2,609	5,605

NOTE: A revised application has been submitted to the Secretary of State by Northern Rhodesia and Nyasaland for a joint scheme to be financed from the Central African regional allocation. No change is made in the approved provision pending approval of the joint application.

APPENDIX D15.

Head 35.—Development and Welfare Schemes: Sub-head 62, Forest Service in Rural Areas.

Establishment, 1946	Establishment, 1947	Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Estimate, 1948	
				£	£	£	£	
			PERSONAL EMOLUMENTS.					
—	—	1	1. Assistant Conservator of Forests	—	—	—	600	
—	—	1	Forester	—	—	—	300	
—	—	1	African Clerk	—	—	—	24	
—	—	2	Forest Rangers	—	—	—	48	
—	—	4	Forest Guards	—	—	—	48	
—	—	—	Cost of Living Allowances	—	—	—	350	
			Total Personal Emoluments	—	—	—	1,370	
			OTHER CHARGES.					
—	—	—	2. Travelling Allowances ...	—	—	—	50	*
—	—	—	4. Transport—General ...	—	—	—	300	
—	—	—	5. African Staff—Rations ...	—	—	—	85	
—	—	—	6. African Staff—Uniforms ...	—	—	—	50	
—	—	—	7. Equipment and Seed ...	—	—	—	50	
—	—	—	8. Labour	—	—	—	350	
			Total Other Charges	—	—	—	885	
			SPECIAL EXPENDITURE.					
—	—	—	10. Buildings	—	—	—	2,000	
—	—	—	11. Station Equipment ...	—	—	—	100	
—	—	—	12. Vehicles	—	—	—	1,200	
—	—	—	13. Typewriters...	—	—	—	50	
—	—	—	14. Tents and Camp Equipment	—	—	—	50	
			Total Special Expenditure	—	—	—	3,400	
			Total—Sub-head 62	—	—	—	5,655	

* Recurrent expenditure not to be incurred.

APPENDIX D17.

Head 35.—Development and Welfare Schemes: Sub-head 70, Additional Staff and Equipment—Veterinary Department.

Establishment, 1946	Establishment, 1947	Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Estimate, 1948
				£	£	£	£
			PERSONAL EMOLUMENTS.				
—	3	3	1. Veterinary Officer and Veterinary Research Officers, £600; £630×30—720×30—840	—	1,800	—	1,800
—	1	1	Dairy and Poultry Officer, £600×30—720×30—840	—	600	—	600
—	1	1	Research Assistant, £300×15—390×30—450×15—480	—	360	—	360
—	4	4	Inspector of Works, £390×15—480×15—540 ...	—	360	90	360
—	2	2	African Veterinary Assistants	—	144	—	144
—	2	2	African Clerks	—	132	—	132
—	4	4	African Mechanics	—	144	—	144
—	1	1	African Artisans	—	384	—	384
—	2	2	African Supervisor ...	—	144	—	144
—	—	—	Orderlies	—	30	—	30
			Cost of Living Allowance ...	—	—	18	666
			Total Personal Emoluments	—	4,098	108	4,764
			OTHER CHARGES.				
—	—	—	2. Travelling Allowances ...	—	120	—	120
—	—	—	3. Travelling on Leave ...	—	—	—	—
—	—	—	4. Transport—General ...	—	1,000	—	1,000
—	—	—	5. African Staff—Rations ...	—	50	—	50
—	—	—	6. African Staff—Uniforms ...	—	105	—	105
—	—	—	7. Office Expenses	—	50	—	50
			Total Other Charges	—	1,325	—	1,325
			SPECIAL EXPENDITURE.				
—	—	—	9. Camp Equipment	—	150	150	150
—	—	—	10. Laboratory Equipment ...	—	400	400	400
—	—	—	11. Motor Vehicles	—	1,800	1,800	1,800
—	—	—	12. Typewriters...	—	72	72	72
—	—	—	13. Office Furniture	—	30	—	30
—	—	—	14. Bicycles	—	120	120	120
			Total Special Expenditure	—	2,572	2,542	2,572
			Total—Sub-head 70	—	7,995	2,650	8,661

APPENDIX D18.

Head 35.—Development and Welfare Schemes : Sub-head 72, Disease Eradication.

Establishment, 1946	Establishment, 1947	Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Estimate, 1948
				£	£	£	£
			PERSONAL EMOLUMENTS.				
			1. African Orderlies and Guards	—	144	144	156
14	—	14	African Indunas	—	136	136	161
8	—	8	Driver	—	48	—	48
1	—	1	Dip Tank Capitaos ...	—	—	142	159
11	—	11	Cost of Living Allowances	—	—	—	204
—	—	—	*Total Personal Emoluments*	—	328	422	728
			OTHER CHARGES.				
			2. Travelling Allowances ...	—	200	45	200
—	—	—	4. Transport—General ...	—	1,659	1,400	1,659
—	—	—	5. Expenses—African Staff ...	—	126	126	126
—	—	—	6. Vaccines, Drugs and Equipment	—	1,050	1,000	1,530
—	—	—	7. Contingencies	—	40	40	40
—	—	—	*Total Other Charges*	—	3,075	2,611	3,555
			SPECIAL EXPENDITURE.				
—	—	—	9. Travelling Equipment ...	—	25	25	25
—	—	—	10. Branding Irons	—	72	72	72
—	—	—	11. Immunity and Inspection Tests	—	200	80	200
—	—	—	12. Motor Vehicle	—	600	600	—
—	—	—	13. Buildings : Three Centres	—	2,100	700	2,100
—	—	—	14. East Coast Fever Control ...	—	—	—	4,481
—	—	—	*Total Special Expenditure*	—	2,997	1,477	6,878
—	—	—	**Total—Sub-head 72**	—	6,400	4,510	11,161

APPENDIX D19.

Head 35.—Development and Welfare Schemes: Sub-head 74, African Veterinary Assistants' School.

blish-ent, 946	Establish-ment, 1947	Establish-ment, 1948	Details	Actual Expendi-ture, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Estimate, 1948
				£	£	£	£
			PERSONAL EMOLUMENTS.				
—	1	1	1. Veterinary Officer, £600; £630×30—720×30—840	—	600	—	—
—	1	1	Assistant Lecturer and Demonstrator, £600 ...	—	600	600	600
—	—	—	African Staff	—	25	18	31
—	—	—	Cost of Living Allowances	—	—	160	160
			Total Personal Emoluments	—	1,225	778	791
			OTHER CHARGES.				
—	—	—	2. Students: Allowances, Uniforms, Rations, etc. ...	—	703	726	1,064
—	—	—	4. Transport—General ...	—	443	433	479
—	—	—	5. Upkeep: Buildings and General	—	413	413	498
—	—	—	6. Books, Stationery and Office Expenses ...	—	32	32	62
			Total Other Charges	—	1,591	1,604	2,103
			SPECIAL EXPENDITURE.				
—	—	—	9. Equipment: Field Demonstration and Camp ...	—	183	183	228
—	—	—	10. Motor Vehicles and Bicycles	—	430	430	410
			Total Special Expenditure	—	613	613	638
			Total—Sub-head 74	—	3,429	2,995	3,532

APPENDIX D20.

Head 35.—Development and Welfare Schemes: Sub-head 80, Tsetse Control—Eastern Province.

Establishment, 1946	Establishment, 1947	Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Revised Estimate, 1948	
				£	£	£	£	
			PERSONAL EMOLUMENTS.					
—	1	1	1. Tsetse Control Supervisor, 1 at £420 a year ...	—	420	360	420	
—	—	—	Housing Allowance ...	—	60	60	60	
			Total Personal Emoluments	—	480	420	480	
			OTHER CHARGES.					
			4. Transport—General ...	—	200	200	200	
—	—	—	5. Clearing	2,217	400	869	1,520	(1)
—	—	—	6. Game Control Measures ...	551	840	840	880	
—	—	—	7. War Bonuses	951	1,250	600	1,250	(2)
			Total Other Charges	3,719	2,690	2,509	3,850	
			SPECIAL EXPENDITURE.					
			9. Fly Catching Experiment	2	50	50	40	
—	—	—	10. Fencing	—	10,400	—	5,457	
			Total Special Expenditure	2	10,450	50	5,497	
			Total—Sub-head 80	3,721	13,620	2,979	*9,827	

(1) Increased provision transferred from item 10 "Fencing", which is reduced *pro rata*.

(2) Increased from £750 to meet cost of additional labour employed on clearing.

APPENDIX D21.

Head 35.—Development and Welfare Schemes: Sub-head 81, Tsetse Control—Kafue (North) Cattle Area.

Establishment, 1946	Establishment, 1947	Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Estimate, 1948
				£	£	£	£
			PERSONAL EMOLUMENTS.				
—	2	2	1. Tsetse Control Supervisors, 1 at £480, 1 at £330 ...	—	810	480	810
—	—	—	African Staff, Guards, Orderlies, etc.	—	680	680	680
			Total Personal Emoluments	—	1,490	1,160	1,490
			OTHER CHARGES.				
			4. Transport—General ...	—	2,110	400	2,000
—	—	—	5. Labour	—	4,090	800	4,000
—	—	—	6. War Bonuses	—	—	400	465
			Total Other Charges	—	6,200	1,600	6,465
			SPECIAL EXPENDITURE.				
			8. Tools and Equipment ...	—	300	100	250
—	—	—	9. Arms and Ammunition ...	—	300	300	100
—	—	—	10. Fly Picket Equipment ...	—	100	100	50
—	—	—	11. Fencing Material	—	4,250	—	4,250
—	—	—	12. Motor Vehicles	—	—	—	750
			Total Special Expenditure	—	4,950	500	5,400
			Total—Sub-head 81	3,898	12,640	3,260	13,355

APPENDIX D22.

Head 35.—Development and Welfare Schemes: Sub-head 82, Expansion of Departmental Services.

Establishment, 1947	Original Establishment, 1948	Revised Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Revised Estimate, 1948	
				£	£	£	£	
			PERSONAL EMOLUMENTS.					
2	2	1	1. Biologists, £400; £450 × 25—600—660 × 30—840 ...	—	400	—	300	(1)
1	1	1	Fisheries Officer, £400; £450 × 25—600—660 × 30—840	—	300	—	200	(2)
—	1	1	Fish Culturist (Scientific Officer), £840	—	—	210	840	(3)
3	5	5	Rangers, £300 × 15—390 × 30—450 × 15—480 ...	—	650	650	1,520	(4)
2	3	3	Rangers, Temporary ...	—	900	900	820	(5)
			Quarters Allowance ...	—	—	—	125	
1	2	2	Tsetse Control Supervisors, Temporary	—	195	195	530	(6)
			Quarters Allowance ...	—	—	—	80	
3	9	7	African Clerks	—	40	40	160	
18	18	10	African Scouts	—	180	180	290	
51	51	51	Ungraded African Staff ...	—	295	295	1,230	(7)
			Total Personal Emoluments	—	2,960	2,470	6,095	
			OTHER CHARGES.					
—	—	—	2. Travelling Allowances ...	—	250	250	485	
—	—	—	3. Travelling on Leave ...	—	—	—	40	
—	—	—	4. Transport—General ...	—	2,956	1,500	3,000	
—	—	—	5. African Staff—Rations ...	—	297	297	100	
—	—	—	6. African Staff—Uniforms ...	—	340	340	343	
—	—	—	7. Arms and Ammunition ...	—	463	463	468	
—	—	—	8. Maintenance of Camps ...	—	162	162	162	
—	—	—	9. Vermin Destruction ...	—	750	750	750	
—	—	—	10. Tsetse Control Measures ...	—	1,740	800	700	
—	—	—	11. Office Upkeep and Library	—	40	40	40	
—	—	—	12. War Bonuses	—	750	750	1,060	
			Total Other Charges	—	7,748	5,352	7,148	
			SPECIAL EXPENDITURE.					
—	—	—	14. Motor Vehicles	—	3,150	1,350	2,600	
—	—	—	15. Typewriters	—	104	104	60	
—	—	—	16. Rifles	—	400	400	660	
—	—	—	17. Office Furniture	—	180	150	388	
—	—	—	18. Camp Equipment	—	818	818	355	
—	—	—	19. Field Quarters and Camps	—	1,320	1,000	500	
—	—	—	20. Technical Equipment ...	—	900	900	600	
—	—	—	21. Launch	—	1,000	1,000	3,000	(10)
—	—	—	22. Buildings	—	7,420	6,430	18,140	(8)
—	—	—	23. Fish Dams	—	—	—	500	(9)
—	—	—	24. Fish Farming Investigations	—	—	—	1,000	(11)
			Total Special Expenditure	—	15,292	12,152	27,803	
			Total—Sub-head 82	—	26,000	19,974	41,046	

(1) Reduced from £600 to £300 for one biologist for half year.
(2) Reduced from £300 to £200 as Fisheries Officer not yet obtained.
(3) Officer appointed on contract should arrive shortly.
(4) Increased from £1,455 to £1,520 to cover cost of three officers appointed.
(5) Reduced from £1,140 to £820: officers engaged at lower salary than estimated.
(6) Reduced from £672 to £530: fewer engagements.
(7) Increased from £591 to £1,230 owing to new scales of pay.
(8) Increase in building programme made possible by engagement of contractor at Chilanga.
(9) Reduced from £1,000 as only one dam can be built in 1948.
(10) Provision for two launches at £1,500 each for Bangweulu and Luapula areas.
(11) Token provision for expenses of two experts from Europe to undertake investigations.

APPENDIX D23.

Head 35.—Development and Welfare Schemes: Sub-head 83, Fish Farming.

The original Scheme shown under Head 35 : 83 of the 1947 Estimates was abandoned, and the revised one shown below substituted in view of technical advice received since the original Scheme was put forward. The revised Scheme is for two fish farms at Chilanga (twenty acres) and Fort Rosebery (forty acres).

Establishment, 1946	Establishment, 1947	Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Revised Estimate, 1948
				£	£	£	£
			OTHER CHARGES.				
—	—	—	2. African Staff and Labour ...	—	—	—	250
—	—	—	3. Running Costs of Pumping Plant, Chilanga	—	—	—	50
—	—	—	4. Maintenance of Plants and Buildings	—	—	—	20
—	—	—	5. Fish Foods and Fertilisers, Transport and Equipment	—	—	—	40
			Total Other Charges	—	—	—	360
			SPECIAL EXPENDITURE.				
—	—	—	7. Dam Construction Unit ...	—	—	—	2,365
—	—	—	8. Borehole at Chilanga ...	—	—	120	120
—	—	—	9. Pump and Engine at Chilanga	—	—	—	750
				—	—	50	300
—	—	—	10. Piping, Channels and Sluices	—	—	—	1,000
—	—	—	11. Earth Moving Costs ...	—	—	200	350
—	—	—	12. Buildings				
			Total Special Expenditure	—	—	370	4,885
			Total—Sub-head 83	—	—	370	5,245

APPENDIX D24.

Head 35.—Development and Welfare Schemes: Sub-head 84, Tsetse Control, Feira.

Establishment, 1946	Establishment, 1947	Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Revised Estimate, 1948
				£	£	£	£
			PERSONAL EMOLUMENTS.				
—	1	1	1. Tsetse Control Supervisor (Temporary)	—	480	360	480
—	—	—	Housing Allowance ...	—	—	54	—
—	1	1	African Clerk	—	60	30	60
—	30	30	African Hunters	—	540	540	540
—	10	10	Fly Picket Orderlies ...	—	150	150	150
—	4	4	Capitaos	—	144	144	144
			Total Personal Emoluments	—	1,374	1,278	1,374
			OTHER CHARGES.				
—	—	—	2. Travelling Allowances ...	—	60	60	60
—	—	—	4. Transport—General ...	—	600	600	600
—	—	—	6. African Staff—Uniforms ...	—	220	220	220
—	—	—	7. Labour	—	3,600	3,000	3,000
—	—	—	8. Arms and Ammunition ...	—	200	200	200
—	—	—	9. War Bonuses	—	206	205	205
			Total Other Charges	—	4,886	4,285	4,285
			SPECIAL EXPENDITURE.				
—	—	—	11. Rifles	—	270	270	170
—	—	—	12. Tools and Equipment ...	—	300	300	200
—	—	—	13. Tentage	—	180	180	87
—	—	—	14. Buildings and Camps ...	—	1,350	500	650
—	—	—	15. Motor Vehicles	—	—	—	750
			Total Special Expenditure	—	2,100	1,250	1,857
			Total—Sub-head 84	—	8,360	6,813	7,516

APPENDIX D25.

Head 35.—Development and Welfare Schemes: Sub-head 93, Development Areas—Capital Works.

	Approved Expenditure to 31-12-47 £	*Revotes from 1947* £	*New Works* £	*Total* £
COMPLETION OF 1947 PROGRAMME:				
Establishing 3 Development Districts (Serenje, Fort Rosebery, Manyinga), for details *see* Development Plan p. 57, para. B1 ...	41,250	19,400	—	19,400
	41,250	19,400	—	19,400
1948 PROGRAMME:				
Establishing 3 Development Districts as under, per unit:				
(i) Clearing, Water, Light	—	—	3,500	—
(ii) European Housing	—	—	23,000	—
(iii) African Staff Housing	—	—	3,200	—
(iv) Labourers' Housing	—	—	2,400	—
(v) Offices and Stores	—	—	4,000	—
(vi) Transport, ...	—	—	4,800	40,900
	—	—	40,900	40,900
Total—Sub-head 93	41,250	19,000	40,900	60,300

APPENDIX D26.

Head 35.—Development and Welfare Schemes: Sub-head 94, Development Areas—Recurrent Expenditure.

	£	£
DEVELOPMENT AREAS—Estimate for seven areas:—		
PERSONAL EMOLUMENTS.		
6 Building Foremen @ £600 (part year)		6,800
140 African Staff at £60		
OTHER CHARGES.		
(i) Labour	2,100	
(ii) Travelling Allowances	175	
(iii) Transport—General	1,400	
(iv) African Staff—Rations	175	
(v) African Staff—Uniforms	350	
(vi) Station Upkeep	3,500	
(vii) Maintenance Area Projects...		7,700
SPECIAL EXPENDITURE.		
Area Development Projects		17,500
		£32,000

APPENDIX D28.

Head 35.—Development and Welfare Schemes: Sub-head 115, Water Supplies.

lish- nt. 7	Original Establishment, 1948*	Revised Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947*	Revised Estimate, 1947*	Revised Estimate, 1948	
			PERSONAL EMOLUMENTS.	£	£	£	£	
	1	1	1. Geologist, £500 for 2 years; £550 - 25—600 - 30—840	—	—	—	350	(1)
	3	4	Assistant Water Engineers, £450 for 2 years; £475 - 25—600 - 30—840 ...	—	—	—	750	(2)
	2	2	Engineering Assistants, Scale 1	—	—	—	440	(3)
	2	—	Senior Water Supply Superintendents, £480 - 20—600	—	—	—	—	(4)
	3	1	Water Supply Superintendents, £390 - 15—480 ...	—	—	—	397	(5)
	—	3	Drillers, £390 - 15—480 ...	—	—	—	585	(6)
	6	6	Apprentice Drillers (Learners' Scale)	—	—	—	748	
	11	11	Water Supply Foremen, £300 - 15—390	—	—	—	2,850	(7)
	2	2	Mechanics, £390 - 15—480	—	—	—	585	(8)
	4	4	Mechanical Plant Operators, £390 - 15—480	—	—	—	780	(9)
	4	4	Clerks: 1 Male Clerical Grade, 3 Female Clerical Grade	—	—	—	719	
	14	14	African Staff: 3 Clerks, 2 Drivers, 5 Storemen, 4 Orderlies	—	—	—	300	
	—	—	Cost of Living Allowance ...	—	—	—	3,606	
	—	—	Housing Allowance ...	—	—	—	96	
	—	—	Field Allowances	—	—	—	1,164	
			Total Personal Emoluments	—	—	—	13,370	
			OTHER CHARGES.					
	—	—	2. Travelling Allowance ...	—	—	—	320	
	—	—	3. Travelling on Leave ...	—	—	—	—	
	—	—	4. Transport—General ...	—	—	—	1,100	
	—	—	5. African Staff—Rations ...	—	—	—	83	
	—	—	6. African Staff—Uniforms ...	—	—	—	59	
	—	—	7. Office Requisites	—	—	—	175	
	—	—	8. Investigation	—	—	—	500	
	—	—	9. Contingencies	—	—	—	50	
	—	—	10. Maintenance of Water Supplies	—	—	—	1,000	
	—	—	11. Grants to Native Authorities	—	—	—	200	
	—	—	12. Tools and Implements ...	—	—	—	1,000	
	—	—	13. Maintenance of Plant ...	—	—	—	1,000	
			Total Other Charges	—	—	—	5,487	
			SPECIAL EXPENDITURE.					
	—	—	14. Surveying and Scientific Instruments	—	—	—	1,541	
	—	—	15. Office Furniture and Equipment	—	—	—	200	
	—	—	16. Camp Equipment	—	—	—	1,680	
	—	—	17. Water Supplies in Native Areas	—	—	—	46,920	
	—	—	18. Motor Vehicles	—	—	—	13,980	(10)
	—	—	19. Purchase of Plant	—	—	—	27,250	(11)
	—	—	20. Typewriters...	—	—	—	80	
			Total Special Expenditure	—	—	—	91,651	
			Total Sub-head 115	—	—	—	110,508	

* Owing to separation of Department from the Public Works Department during 1947, little of the normal recurrent expenditure of the Department was charged to the Departmental Vote and adjustments have now been made to transfer normal Departmental expenditure to Head 43. This Appendix, therefore, does not follow on from Appendix Y as shown at page 108 of the Approved Estimates for 1947.

(1) Engaged 1st June; initial salary, £600 per annum.

(2) Increase of one on establishment, two for six months, two for four months.

(3) Two for eight months; one initial salary, £360 per annum.

(4) Item not repeated, posts deleted.

(5) Reduction of posts. Normal increment.

(6) Additional posts in place of Water Supply Superintendents.

(7) Three for six months.

(8) One for six months.

(9) One for nine months, two for six months, one for nine months.

(10) Three additional heavy vehicles for three drilling rigs.

(11) Allow for three drilling rigs with auxiliary equipment, including three caravans.
Includes equipment ordered 1947, not yet delivered.

APPENDIX D29.

Head 35.—Development and Welfare Schemes: Sub-head 120, Irrigation.

Establishment, 1947	Original Establishment, 1948	Revised Establishment, 1948	Details	Actual Expenditure, 1947	Approved Estimate, 1947	Original Estimate, 1948	Revised Estimate, 1948	
				£	£	£	£	
			PERSONAL EMOLUMENTS.					
—	1	3	1. Assistant Water Engineers, £450 for 2 years; £475 × 26—600 × 30—840 ...	—	—	450	1,120	(1)
—	—	4	Engineering Assistants, Scale I	—	—	—	700	(2)
—	—	3	Water Supply Foremen, £300 × 15—390	—	—	—	500	(3)
—	—	3	Mechanical Plant Operators, £390 × 15—480	—	—	—	535	(4)
—	—	—	Cost of Living Allowance ...	—	—	140	1,050	(5)
—	—	—	Field Allowances	—	—	—	445	(6)
			Total Personal Emoluments	—	—	590	4,350	
			OTHER CHARGE.					
—	—	—	2. Travelling Allowance ...	—	—	50	80	
—	—	—	3. Travelling on Leave ...	—	—	—	—	
—	—	—	4. Transport—General... ...	—	—	50	375	
—	—	—	5. Investigation	—	—	500	1,500	
—	—	—	6. Tools and Implements ...	—	—	50	300	
—	—	—	7. Maintenance of Plant ...	—	—	60	240	
			Total Other Charges	—	—	710	2,495	
			SPECIAL EXPENDITURE.					
—	—	—	8. Surveying and Scientific Instruments	—	—	90	500	
—	—	—	9. Office Furniture	—	—	30	30	
—	—	—	10. Camp Equipment	—	—	30	400	
—	—	—	11. Irrigation Schemes... ...	—	—	—	—	
—	—	—	(*a*) Barotse Plain (token provision)	—	—	2,500	2,500	
—	—	—	(*b*) Kaleya Valley Wheat Lands (token provision)	—	—	—	6,000	(7)
—	—	—	12. Motor Vehicles	—	—	450	4,350	(8)
—	—	—	13. Purchase of Plant	—	—	3,000	12,375	
			Total Special Expenditure	—	—	6,100	26,155	
			Total—Sub-head 120	—	—	7,400	33,000	

(1) Two at £840 per annum for eight months, one at £450 per annum for six months. New posts for hydrographic survey preparation and general supervision of schemes.

(2) Two for eight months, two for six months. New posts to handle details of hydrographic survey.

(3) New posts. Construction on Kaleya Valley Wheat Lands Irrigation Scheme. One for eight months, two for six months.

(4) New posts. Three for six months.

(5) New item.

(6) Extra vehicles required for increased programme.

(7) Three tractors and auxiliary earth moving equipment.

(8) Additional expenditure due to increased programme.

APPENDIX D30.

Head 35.—Development and Welfare Schemes: Sub-head 153, Central African Broadcasting Scheme.

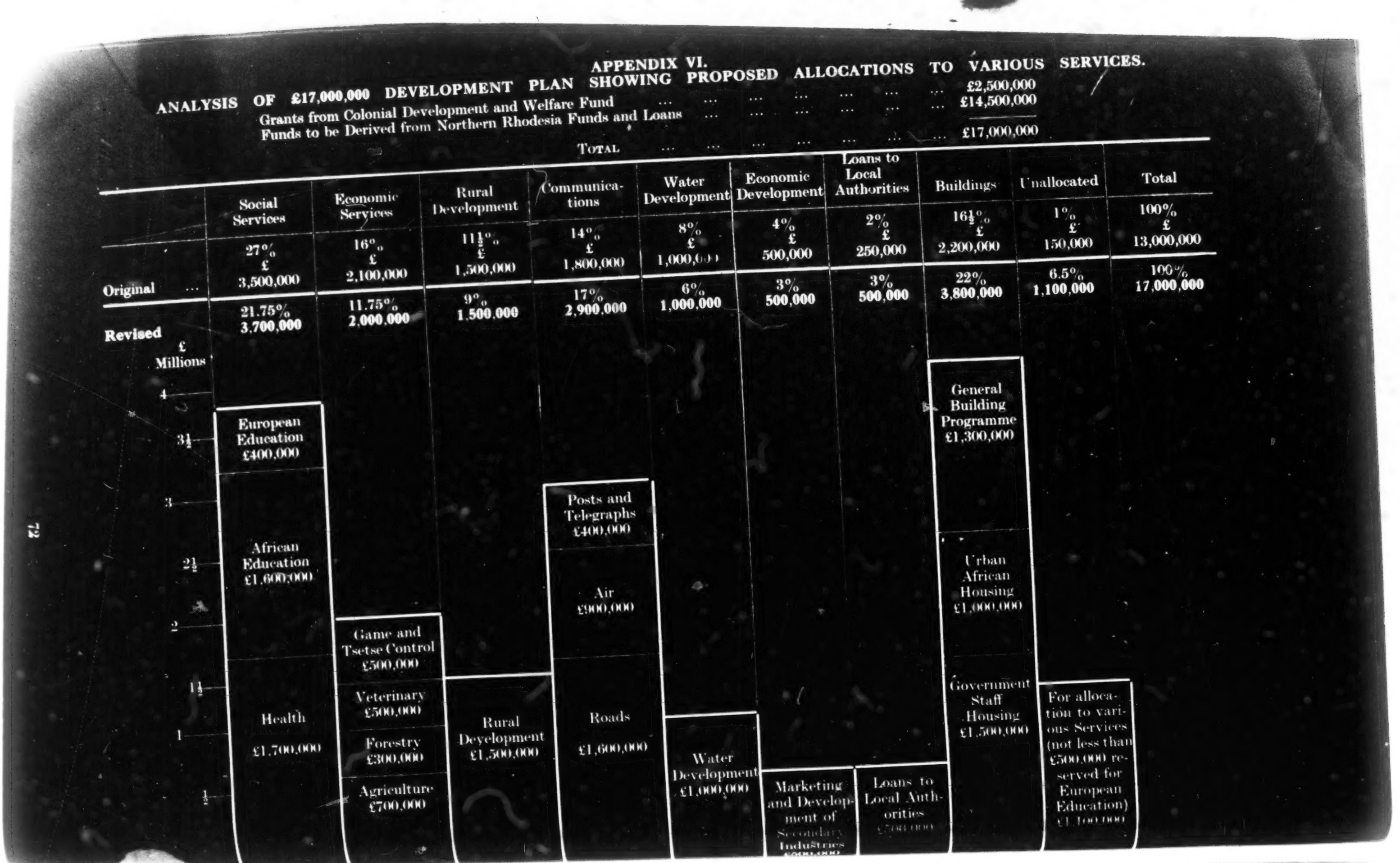
Establishment, 1946	Establishment, 1947	Establishment, 1948	Details	Actual Expenditure, 1946	Approved Estimate, 1947	Revised Estimate, 1947	Estimate, 1948	
				£	£	£	£	
			PERSONAL EMOLUMENTS.					
—	1	1	1. Broadcasting Officer ...	—	720	—	850	
—	—	1	Assistant Broadcasting Officer	—	—	—	720	
—	1	2	Clerks	—	244	244	480	
—	1	1	Broadcasting Engineer ...	—	720	663	850	
—	—	1	Assistant Broadcasting Engineer	—	—	—	720	
—	1	2	Recording Engineers ...	—	600	—	1,000	
—	—	1	Inspector (Receiver Maintenance)	—	—	—	500	
—	2	3	Technicians	—	840	840	1,200	
			African Staff:					
—	7	7	African Broadcasters (graded)	—	500	180	572	
—	1	3	Drivers (ungraded) ...	—	60	—	180	
—	3	4	Orderlies	—	36	20	96	
—	—	—	Provision for Cost of Living Allowances	—	—	—	2,500	
			Total Personal Emoluments	—	3,720	1,947	9,668	
			OTHER CHARGES.					
—	—	—	2. Gramophone Records and Blanks	—	50	50	300	
—	—	—	3. Broadcasting Expenses ...	—	200	120	500	
—	—	—	4. Maintenance of Apparatus	—	2,000	1,000	2,500	
—	—	—	5. Replacement Transmitter Valves	—	—	—	1,000	
—	—	—	6. Transport—General ...	—	300	100	500	
—	—	—	7. Travelling Allowances ...	—	80	30	80	
—	—	—	8. Payment of News Correspondents	—	60	—	60	
—	—	—	9. Copyright Fees	—	100	38	200	
—	—	—	10. Travelling on Leave and Appointment	—	—	—	500	
—	—	—	11. African Staff: Rations and Uniforms	—	46	46	100	
—	—	—	12. Contingencies	—	100	20	486	
			Total Other Charges	—	2,936	1,404	6,226	
			SPECIAL EXPENDITURE.					
—	—	—	13. Transmitter and Studio Buildings	—	1,000	—	7,000	
—	—	—	14. 15 k.w. Transmitter and Plant	—	35,000	—	46,000	
—	—	—	15. Communication Receivers and Spares	—	—	—	300	
—	—	—	16. Fixed Recording Equipment	—	—	—	8,000	
—	—	—	17. Recording Vans (2) ...	—	2,600	—	5,000	
—	—	—	18. Aerials, Feeder Lines, etc.	—	500	—	850	
—	—	—	19. Community Receiving Sets	—	—	—	10,000	
—	—	—	20. *Items not repeated*	—	1,400	1,400	—	
			Total Special Expenditure	—	40,500	1,400	77,150	
			Total—Sub-head 153	—	47,156	4,751	93,044	(1)

(1) This is now Development Scheme D.793 as approved by the Secretary of State with modifications proposed by Government to the Secretary of State to which he has not yet agreed.

Sub-heads as set out in Secretary of State's scheme have been adhered to as far as possible.

APPENDIX VI.

ANALYSIS OF £17,000,000 DEVELOPMENT PLAN SHOWING PROPOSED ALLOCATIONS TO VARIOUS SERVICES.

Grants from Colonial Development and Welfare Fund	£2,500,000
Funds to be Derived from Northern Rhodesia Funds and Loans	£14,500,000
TOTAL	£17,000,000

	Social Services	Economic Services	Rural Development	Communications	Water Development	Economic Development	Loans to Local Authorities	Buildings	Unallocated	Total
Original ...	27% £ 3,500,000	16% £ 2,100,000	11½% £ 1,500,000	14% £ 1,800,000	8% £ 1,000,000	4% £ 500,000	2% £ 250,000	16½% £ 2,200,000	1% £ 150,000	100% £ 13,000,000
Revised	21.75% 3,700,000	11.75% 2,000,000	9% 1,500,000	17% 2,900,000	6% 1,000,000	3% 500,000	3% 500,000	22% 3,800,000	6.5% 1,100,000	100% 17,000,000